MIND & MATTER

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MIND & MATTER

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PREFACE

Philosophy has two parts, answering roughly to Kant's *Analytic* and *Dialectic*. The first consists in an analysis of ordinary Experience in order to find a coherent account of the principles involved in it. The second is concerned with the ultimate nature of the all-inclusive Universe of Being. It considers whether the Universe, besides being all-inclusive, is properly regarded as a self-complete unity, rather than as an endless series or aggregate. If it is a unity, the question arises as to the nature of the unity, and this leads to the problem of the distinction and relation of the world of becoming and finite existence to eternal Being.

These two lines of inquiry are not sharply separable. Each, when thoroughly followed up, passes into the other. It is possible to start with either of them. Spinoza, for instance, begins with a comprehensive theory of the nature of the Universe and proceeds to use this as a guiding clue to the analysis of ordinary experience. Mr Alexander, in his great work *Space, Time and Deity*, to a large extent follows the Spinozistic plan. I prefer the Kantian procedure as more congenial to myself and as better suited to the requirements of the present time. In this book I confine myself to an examination of certain aspects of ordinary experience—those involved in the knowledge of the physical world, of the self and of minds other than our own. I reserve the express treatment of more ultimate problems for a future work to be entitled *God and Nature*. I reserve for this work what I have to say on Ethical and Religious Experience, which have already been so admirably treated in the Gifford Lectures of Professor Sorley and Professor Taylor.

I feel keenly that my debt direct and indirect to writers of the present day is very inadequately represented by my references in the text and in footnotes. It is certainly not measured by the degree of my agreement with them. That I owe very much to the late Professor Ward is obvious. My debt is at least as great where I cannot follow him as where I can. For the rest, I may say that in many places I should not have written as I have written if I had not been acquainted with the work of Mr Bertrand Russell, Mr Alexander, Mr Broad, Professor Moore and the late Mr W. E. Johnson.

I have to acknowledge with deep gratitude the services rendered me by my wife and my son, Mr A. K. Stout. My wife patiently carried out the tedious task of making a typed copy of my difficult handwriting. My son, besides making many helpful and acute suggestions, compiled the Index and saw the whole book through the press.

G. F. STOUT

CRAIGARD,
ST ANDREWS
March, 1931

BOOK ONE

THE ANIMISM OF COMMON SENSE

Chapter I

COMMON SENSE AND PHILOSOPHY

1. *Introductory*

Philosophers very frequently, and some of them constantly, refer to what they call 'common sense' or the view of the 'plain man', as important for the decision of philosophical questions. They may not regard its authority as final: but they may, at least, treat it as a witness whose testimony must be carefully considered before it is rejected. Even when it is held to be wrong, the situation is not felt to be satisfactory unless the mistake is traced to its source and explained. Hume, for instance, reaches results which, as he himself recognises, bid defiance to common sense; but he takes elaborate pains to trace the psychological processes, which, as he supposes, account for the common error.

If 'common sense' is to have this importance for philosophy it must itself be a philosophical conception, which requires to be carefully defined. Its philosophical meaning must differ from that which it bears in ordinary language.

2. *Ordinary Meaning of 'Common Sense'*

In popular parlance, *common* sense is opposed to the *special* sense of the expert. The sense which is *not* common belongs to a man inasmuch as he has been led by his distinctive interests to acquire, in a special direction, experience, knowledge and insight which are unshared by others. The lawyer and the physician have each their professional point of view which is contrasted with the common sense of the

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layman, and each of them is a layman relatively to the other. More generally, the attitude of common sense is that of the 'plain man' or 'man in the street' as contrasted with that of the poet, the artist, the original thinker in ethics, politics, or religion, the man of science or the philosopher. It frequently happens that common sense as thus defined is in conflict with the view of the expert. When this occurs, the 'plain man' by no means always feels bound to give way. Can he have any warrant for this claim to independent judgment? Is he not merely opposing comparative ignorance and incompetence to competence and knowledge? This is very often his actual position, but not always. He may have an independent standing-ground on which to base his resistance. The specialist may be biased by his special interests. Being absorbed and preoccupied by his own line of thought, he may fail to realise the importance of points which are obvious to others and really relevant to the question at issue. The legal mind may be warped in dealing with ethical problems; the physician preoccupied with men's bodies may be blind to what concerns their souls. In seeing what others do not see, the specialist may fail to see or appreciate what the others see and appreciate. The expert *may* err in this way; but he may also be right even when the plain man is quite incredulous. How is the conflict to be decided? I shall have presently to refer to a group of questions in which the ultimate arbiter is philosophy. Setting these aside for the moment, we may say that the plain man, being unable to understand the specialist, has little chance of convincing him. But the scientific expert, not only when he is right but even sometimes when he is wrong, has means of convincing the unscientific. He may find ground common to himself and the plain man; he may explain difficulties and show the nature of the steps by which his own results have been reached. This is the purpose of popular books and lectures on science as part of a general education. But this procedure is of limited application. The full authority which physical science has actually achieved is due also to its acquired prestige, which leads the plain man piously to trust it when he cannot trace it. This prestige arises from its palpable success in predicting observable events, and in making possible practical contrivances such as aeroplanes and broadcasting. How important this acquired prestige is we may realise by comparing the present popular faith in 'what science teaches' with the state of things at the time when Swift's *Laputa* passed for a pointed satire on the Royal Society.

So far as conflict between the view of the plain man and that of the specialist can be finally and satisfactorily settled in such ways, the philosopher is concerned with it only as one specialist among others. But there is a class of questions in which neither the positive explanations nor the acquired prestige of the expert are felt to be adequate. If common sense is convinced in these, it is 'convinced against its will' and tends to remain 'of its own opinion still'. When, in the name of science, the man in the street is told that grass is not really green, as it is really extended, he may bow to authority: he may even endeavour to understand, and think that he does understand, the process by which this result is reached, and he may be unable to detect any fallacy in it. None the less, he covertly retains his misgivings, and, when he is not expressly referring to 'what science teaches' his position is, in substance, unaffected by it. When he looks at grass, he still takes it to be green as he takes it to be extended. Similarly, when it is put forward as the teaching of science that the course of events, including the voluntary actions of human beings, is entirely determined by purely physical conditions, the 'plain man' may not openly dissent; he may even plume himself on his scientific enlightenment. None the less, in their practical procedure 'plain men' continue to regard themselves *quâ* conscious subjects, as agents 'having power upon their deeds and on the world'. They continue to assume that they eat because they have a desire for food, and marry because they are in love. They thus hold two incompatible views in turn, one in their ordinary conduct, the other when they are theorising.

In disagreements of this type, we cannot assume either that the expert must be right or, if he is wrong, that his error is corrigible in ways which he himself can recognise as relevant within his own province. I do not mean that if he is a biologist he cannot accept as relevant the findings of the chemist or geologist. For these, like himself, represent physical science and so far have a common interest and are on common ground. Each of them co-operates in his own way in one comprehensive undertaking. If the common field in which they co-operate were co-extensive with the whole universe of being, so far as this is accessible to human experience, no answerable question could be raised, except such as science is in principle competent to answer. The representative of science as such could not be warped in his judgment by one-sided professional interest. I shall presently try to show that, though the field of scientific inquiry is boundless in its range, it is not all-inclusive. It covers only one fundamental aspect of the universe. But even if in truth it covered the whole, it would still be illegitimate to take this for granted without a previous examination of the rival claims, not only of the 'plain man', but of art, religion, ethics, etc. It may be that each of these through the special direction of their divergent interests reveals features of the whole universe of being which escape the others. To assume, without inquiry, that science is all in all, to assume that its serpent, like that of Moses, swallows all the others, is itself a form of the sort of bias which we are discussing, and one which is very prevalent at the present day.

As it is the distinctive aim of the philosopher to give a coherent account of the nature of the universe as a whole,[1] one essential condition of his success is that he shall not fail to take adequate account of all fundamental aspects of the whole. It is therefore a part of the business of the philosopher to examine the claim of each of the divergent developments of human interest and experience to yield genuine insight into some aspect of the whole which is neglected by the others. He has to confront and critically compare them so as to discover how far their apparent disagreement arises from the failure of each of them to keep within its own province. So far as apparent disagreement can be thus explained, divergence remains, but not discrepancy. The total view which emerges is one to which each in his own way contributes, and therefore may be said to be due to all of them conjointly.

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[1] He may find the task impossible; but he is still a philosopher of the sceptical type if he attempts to show how and why it is impossible. And the work of sceptics is of the utmost value even to those who cannot accept the sceptical result.

This suggests another meaning for the term 'common sense'. It may be taken to signify the whole in which the partial views due to one-sided interest and experience are so combined and harmonised that they converge again in a focus. So regarded, common sense will be common, not as a nose is a feature commonly found in a human being, but rather as a community belongs in common to all its members, or as a house is the common work of all those who participate in building it. The sense which is common in this way cannot be identical with what the plain or average man thinks. Which of the two meanings ought the term to bear in philosophy?

3. *The View of the Average Man not the Common Sense to which Philosophy appeals*

'No philosophy', says Adamson, 'is ever able to do more than read significance and meaning into the mass of experience that may be possessed....The most retrograde periods of philosophical thinking have been those in which an unnatural separation was made between the general conception of man's reason, his place and destiny in the scheme of things, and the concrete material presented in his ordinary experience of nature and man.'[1] How is he to use this material? He cannot take it as he initially finds it; for it is initially a heterogeneous and inconsistent mass of experience to which many minds have contributed in relative independence of each other. His first task is to sift and criticise his data. Common sense, considered as an authority to which he appeals, must either be the result reached by this process or some part of the original 'mass of experience' which is of central importance because it provides independently, as nothing else can, a clue to the labyrinth. Is this clue to be sought in the testimony of the 'plain man'? If he has any peculiar claim to speak, his plainness cannot consist merely in the absence of any sort of experience, knowledge or interest except such as—apart from specialist bias—may be found in all other men. For, on this view, the 'plain man' would only represent comparative incompetence. Are we then to regard the 'plain man' as himself a sort of specialist, having for his peculiar province what is required for maintaining bodily existence and satisfying material needs? On this view he is one expert among others. Further, he is far from being free from specialist bias. On the contrary, the 'plain man', as thus defined, is above all others dominated by crude and obstinate prejudices.

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[1] *Development of Modern Philosophy*, vol. I, p. 3.

The philosopher, it may be said in reply, does not directly appeal to what the 'plain man' expressly asserts or believes. He finds it necessary to get behind this by a process of constructive interpretation. Whatever principles are really presupposed as indispensable for practical efficiency are regarded as warranted by common sense. The philosopher, however, can determine what these are only from his own superior standpoint and by his own methods. But when the philosopher proceeds in this way, he is no longer appealing merely or mainly to the 'plain man'. What he is led to assert in the name of common sense will depend on his critical and comparative scrutiny of human experience in general. Only in the light of higher developments can he discriminate what assumptions are really essential to primitive practical efficiency from prejudice due to narrowness and ignorance.

4. *The Appeal to the Educated*[1]

Part of this work he finds already done for him in educated minds as contrasted with what Berkeley calls 'the illiterate bulk of mankind that walk the high road of plain common sense'. A person is educated in the way required, so far as, without being himself a specialist, he follows with interest and appreciation the work of specialists, combining what he owes to each of them severally in his own total view of nature and man. He does not walk 'the high road of the illiterate bulk of mankind'. None the less, he represents Common Sense considered as the outcome of the co-operation of many minds within society. To this social product the 'plain man' essentially contributes. But he does so only in so far as his point of view has been found capable of being retained and incorporated and utilised by the educated. What merely survives from primitive thought without being thus tested and endorsed is mere superstition. What is important is the agreement of the ignorant with the educated as such. Are we then to say that the Common Sense which is important for the philosopher consists in the consensus of the educated? Understood in a certain way, the appeal to such a consensus is not only important but decisive for everyone who tries to persuade or convince others of what he takes to be true. Each of us recognises as ultimately decisive of the value of his own views their general acceptance *in the long run* by relevantly and adequately educated minds, and, through their influence, by the community as a whole. The philosopher, like others, and no less than others, depends on this ultimate verdict of the community for the endorsement of his claims.

But the distinctive appeal of the philosopher to the

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[1] Aristotle's πεπαιδευμένος.

Common Sense of mankind must be of a different nature. It cannot be to a possible future development, but only to the present and also to the past, in so far as he cannot safely assume that the past is obsolete. It follows that the testimony of common sense cannot for him consist in a consensus of educated minds, if we mean by this their direct agreement. For on the points in which he is vitally interested such agreement is limited and dubious, just because education is always, in an endless variety of ways, imperfect. If it were ideally complete, the various developments of human culture would converge in the educated man as in a focus: he would therefore be free from bias and would represent Common Sense in the fullest way. But such an ideal representative is not to be found. An educated man is educated in various ways and degrees; and he responds in varying ways and degrees to the training which he receives. Huxley and Newman were both highly educated. The general trend of education[1] also varies in accordance with the prevailing interest of the age—according as religion or science or art is the fashion of the hour. The revolt of the younger against the older generation is another source of bias. When a man is no longer young his views are more or less settled, and he resents what tends to disturb them: to the enthusiastic youth, on the contrary, the received tradition is likely to appear stale and insipid, so that he is led to grasp at what for him are novelties and to plume himself on being in the van of progress.

Direct appeal to the educated is therefore not enough to determine what Common Sense is, considered as a social product maintained and transmitted from generation to generation through the co-operation and conflict of many minds in thinking and willing.[2] The perfectly educated man is only a regulative idea. Hence the philosopher must proceed by critically comparing and correlating one-sided views. In this undertaking, there is no reason why he should not directly take account of specialists as such, provided that he makes allowance for their peculiarities. The poetic, religious, artistic and scientific genius contributes each in his own way to the common stock, and each in turn is sustained in his distinctive function by the appeal which he makes to the enduring interest of developing human society as a whole.

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[1] Including not merely school and university training but all that is due to communion with other minds in society.

[2] To mark this meaning of the term Common Sense, which alone is of central importance in philosophy, I use capital letters.

5. *The Criticism of Common Sense*

Even when the philosopher has thus ascertained what the testimony of Common Sense is, he is not justified in ascribing to it even a provisional authority, without first subjecting it to further criticism. He has first to inquire whether there is any probable way of accounting for Common-Sense beliefs through fallacies incidental to human nature and to the circumstances of human life. Causality, personal identity, the existence of bodies, may all claim the testimony of Common Sense in their favour. But if Hume's psychological explanation of such beliefs is tenable, this testimony loses whatever value it might otherwise possess. On the other hand, we must not regard a general and persistent tendency towards a certain type of belief or way of regarding nature and man as discredited by the admittedly erroneous special forms which it may assume in special stages and phases of human development. The belief of the savage in sympathetic magic does not discredit the belief in causal connexion as something more than a mere order of sequence. Similarly the crudities of primitive religion do not discredit the advanced forms in which these crudities are superseded and corrected.[1] The persistence of a certain type of belief in spite of acknowledged error and inadequacy in the forms in which it has

[1] Thus Sir J. Frazer's anthropological work does not really undermine Christianity, as he seems to suppose.

taken shape in the past strengthens rather than weakens the evidence of Common Sense in its favour.

6. *The Validity of Common Sense*

Even when a view seems clearly endorsed by Common Sense and is not in any likely way traceable to a natural fallacy, the philosopher is not justified in straightway accepting it without further inquiry. He has still to examine it himself and to take account of the difficulties and objections raised by others. But he ought to start by regarding it as having a presumptive claim to acceptance which can be upset only by cogent and positive reasons against it. The mere failure of this or that specialist to find reason for it, within the limits of his own domain and characteristic methods, ought to count for nothing. It is on a par with the testimony of witnesses absent from the scene of the crime who are prepared to swear that they did *not* see *A* kill *B*. If the philosopher not only finds no relevant reason for rejecting the Common-Sense view, but finds it confirmed by his own independent scrutiny—if, in particular, he finds that it is required for a coherent view of the nature of the universe as a whole—then for him it is finally established.

7. *The Status of Science*

We have so far proceeded on the principle that several main directions of human interest, sustained as enduring social functions by the co-operative consensus of individual minds, may be presumed each in its own way to yield special insight into some partial aspect of the universe which is denied to the others. But this presupposes that none of them occupies an altogether privileged position which constitutes it on all questions a supreme authority from which there is no appeal. Such a privileged position was in mediaeval times assigned to theology. The fashion has now changed; the present tendency is to recognise that type of knowledge which is represented by physical science as the sole ultimate arbiter in all theoretical problems. The assumption is that all questions which are capable of being answered are scientific questions. Hence there is a strong and widespread tendency to make philosophy a 'handmaid' of science as it was once a handmaid of theology. For this position there is much excuse but no real justification. The excuse lies in the immense and undeniable achievements of science in its own special undertaking, taken together with the fact that where conflict has arisen between the scientific doctrine and the beliefs in which other human interests have expressed and defined themselves, science in the opinion of all competent judges has been in the right. The main illustration of this is to be found in the so-called 'conflict of science and religion'. The inference is natural that all other pretended sources of knowledge and insight are discredited.

The inference is natural: none the less it involves a fallacy due to failure to consider the nature of the conflict in which the representatives of science are and ought to be triumphant over all opponents. Common Sense has various aspects corresponding to divergent directions of human interest. As interest can move towards its own satisfaction only through some cognitive definition of its object, these various directions take shape in relevant beliefs. But such beliefs are continually shifting; they take very various and mutually inconsistent forms in different stages and phases of human development both in the individual and in the race. The Common Sense of mankind is not to be identified with any of these temporary and provisional phases of belief; it can no more be so identified than the general functions of respiration or assimilation can be identified with the special and variable ways in which they are provided for in micro-organisms, in insects, in fishes or in mammals. It consists rather in the persistence of plastic tendencies to certain most general and comprehensive views. The claim of any such tendency to belong to Common Sense is measured by its power to maintain itself by adaptive transformation throughout the successive stages of relative ignorance and enlightenment. What is most important for the philosopher is the general trend of the adaptive transformation; for this indicates the sort of reconstruction which partial views must undergo in order to take their proper place in a coherent account of the universe as a whole.

The advance of science has been a most potent factor[1] in modifying and correcting special forms of religious and other non-scientific beliefs. But it by no means follows that there is or can be any ultimate conflict, e.g. between the religious and the scientific sides of Common Sense. Science reaches relative success only through continual trial and failure; it cannot, therefore, condemn religion because it does the same. Conflict becomes necessary only if we begin by assuming that science is the only possible source of anything which can have a legitimate claim to be regarded as knowledge, insight, or grounded belief. To test this assumption we must consider the special scope and function of that type of knowledge which is represented by the physical sciences.

The primary aim of this type of knowledge is to discover what is called the *order* of nature. The ultimate test of its success is the power which it yields to control and anticipate the course of particular events in time and space by formulating a systematic order of rules of the highest attainable generality, according to which spatio-temporal occurrences co-exist, follow each other and vary concomitantly with each other. The beginning and the end of science are found in the particular co-existences and sequences which are accessible to observation and experiment. The knowledge sought by the man of science is such only as may or might, directly or indirectly, help us to anticipate that when a particular event of the sort *A* occurs, another of the sort *B* succeeds, or precedes, or co-exists in a certain assignable way. Science is knowledge of this type

[1] By no means the *only* factor.

carried at once to the highest attainable degree of systematic generality and comprehensiveness, and to the highest attainable degree of detailed precision. In application to practical purposes, it is the sort of knowledge which is embodied in such contrivances as clocks, steam engines, telephones, etc. It is practical inasmuch as it determines what is and is not practicable in adjusting means to ends so as to control the course of events. In the pursuit of his own undertaking the representative of science deliberately neglects all features and aspects of concrete reality which seem to him irrelevant to his purpose. In his search for generality he tries artificial simplifications, conceptual models and hypotheses taken as verified so far as they cover observed particular facts, and discarded so soon and so far as they are found incompatible with new facts. He is satisfied, as we are frequently told, with the description of *how* events take place without raising the question '*Why*?' This does not of course mean that he is content to record the direct results of observation and experiment. He has to set these in a hypothetical context, which, to a large extent, includes factors and processes incapable of being directly observed. The point is that his guiding purpose in describing this hypothetical context is to show how observed phenomena may take place and be connected with each other according to general laws. He is not directly concerned with the question whether and how far his hypothetical description is a transcript of what actually takes place. What Mr Whitehead somewhere says of the pragmatist holds *mutatis mutandis* of the man of science: 'He will swallow anything which' for his purpose 'works'. All else he ignores as an irrelevant encumbrance.

But it is quite arbitrary to assume that what the scientist thus ignores is unreal or unimportant or incapable of being known in any manner or degree. It has often been pointed out, most forcibly by Hume, that even the logical presuppositions of scientific procedure cannot be accounted for as a result reached by that procedure itself. It is true that the knowledge which enables us to attain ends by the use of means is indispensable. But knowledge of this type yields no help in determining what ends we ought to aim at—by what ideals and ultimate principles our conduct ought to be guided; it affords no clue to the general emotional and practical attitude which we may be justified in assuming to the whole of which we are part. It leaves us adrift on the ocean of being, with oars indeed, but without rudder or compass. To set out with the preconception that science covers all features and aspects of reality which are in any way or degree knowable makes this position finally hopeless. It is also, as we have seen, a quite arbitrary course. We are therefore fully justified in considering and critically examining the *primâ facie* claim of other developments of the Common Sense of mankind to supply what its scientific development fails and must fail to give. The sort of insight which we may hope to attain in this way may indeed be extremely vague as compared with the detailed and definite body of scientific doctrine. But any indications, however vague, if they are broad and comprehensive, are of supreme significance. They are so not only to mankind in general, but in a special way to the philosopher, in his task of giving a coherent account of the universe, including all its essential aspects in their correlation with each other.

8. *Common-Sense Animism*

Here I am concerned with what, for want of a better word, I call the Animism of Common Sense. Anthropologists use the term 'animism' in a special technical sense of their own.[1] My application of it is far more comprehensive. I mean by it the tendency to find Mind in Nature generally, and not only in the form of individual minds connected with particular bodies such as those of men and animals.

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[1] 'Animatism' has also for them a restricted technical sense, and it is otherwise unsuitable for my purpose.

Chapter II

THE ANIMISTIC VIEW OF CAUSAL PROCESS

1. *Active Tendency*

'The active power of the Scholastics', says Leibniz, 'is nothing but a mere possibility of acting....But active force is a mean between the...faculty of acting and action itself. It includes effort and thus passes into operation of itself, requiring no aids, but only the removal of hindrance.'[1] Whatever may be the ultimate verdict of science on this conception of active force, Common Sense, at any rate, is fully prepared to accept it as obviously true. A bent bow tends to unbend; and this tendency does not, for Common Sense, consist merely in the bare fact that the bow will unbend if and when the archer releases it. The very word 'releases' implies more than this. It implies the pre-existence of a positive and actual condition which is the reason of the bow's unbending when the archer lets it go. This condition is still regarded as present while the released bow is in process of unbending. There is then more than mere change of relative position; there is in every moment of the process an actual tendency to its continuance. 'Pressure', 'stress', 'strain', 'resistance', 'impetus', 'momentum', 'impulse' are words which, in ordinary language, imply the presence of active tendency and the interplay of active tendencies. For the 'plain man', active tendency is not, like Locke's substance, 'a somewhat we know not what'. It is not, for him, as 'energy' is for the modern physicist, something definable indeed by the way in which it is measured, but otherwise an impenetrable mystery, nor yet a mere symbol, useful to work with, but standing for nothing actual. On the contrary, its intrinsic nature is to be positively apprehended like that of colours and sounds. Further, it is regarded as affording genuine insight into causal process. It is regarded as revealing what takes place when things act and are acted on.

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[1] *De Primae Philosophiae Emendatione, etc.* (Gerhardt's ed. IV, 469; trans. by Latta, *Leibniz' Monadology*, p. 91, note 2).

The question is whether this belief of Common Sense is by its very nature and conditions so illusory in principle that it can be refuted and explained on its own ground, or whether, on the contrary, it has on its own ground a *primâ facie* claim to validity. There are two points on which both those who discredit it and those who accept it are, in general, agreed. (1) There is nothing in the immediate content of sense-experience from which the notion of activity and its contrasted correlate, passivity, could be derived. (2) Their source is to be found in what we experience in our own doing and enduring.

Active tendency in us is variously directed. We need here consider only our active control and command of our bodily movements. We feel ourselves active in these so far as we voluntarily initiate them. We also feel active in endeavouring to make them, even though the attempt fails. On the other hand, where the movement takes place without our voluntary initiative we do not regard it as our deed. The mere passive displacement of our body and its parts is not sufficient, though the complex of changing sensations which accompany it may be essentially similar to those of voluntary movement. Motor process involves a very complex sense-experience; but what alone gives it the character of action or active tendency is the presence of the will to move, where 'will' is taken in the wide sense of conation or appetency. It follows that wherever, apart from our own initiative, relative position or change of position of external objects suggests activity or active tendency, we are supplementing the merely sensible phenomenon by something akin to our own striving. The typical instance is that in which, finding our movements impeded, we endeavour to continue them against resistance by making an increased effort,[1] or when being pushed or pulled we resist by pushing or pulling back. In such situations we are active in endeavouring to move or to keep unmoved and in making a bodily effort as a means to this end. It is only our own action which we actually experience;[2] but, in being aware of our own agency, we cannot help being at the same time aware, or seeming to be aware, of another agency correlated with and opposed to ours within the same total situation. If this were not so, the words 'effort', 'resistance', 'pulling', 'pushing', etc., would lose an essential part of their significance. Sometimes both effort and counter-effort are initiated by ourselves; this happens when, e.g., we press our hands together. Here, though there are two opposed efforts, there is only one active initiative—the will to press our hands together. Further, what is felt as effort in the one hand is apprehended as resistance relatively to the other, and inversely. In a third class of instances, neither effort nor counter-effort are initiated by ourselves. When we perceive a chip swept along by a current, or a bent spring, what is presented as sensible appearance includes relative position and change of position but nothing which could give to such words as 'force', 'stress', 'strain', 'power', 'energy', or to such phrases as 'swept along by the current', the significance which they bear in ordinary language. It is we who supply this significance by reading into the merely sensible phenomena some analogue of what we ourselves experience in active movement and in making efforts against resistance.

There is one obvious objection to this view which if it were valid would make nonsense of it from the outset. It seems to ignore the distinction between inanimate matter and embodied selves. When two men are tugging at opposite ends of a rope, we may properly speak of a common transaction involving the conflict or co-operation of the will of each with that of the other. But if the rope is stretched by weights attached to its opposite ends, how is it possible to ascribe to the weights anything even remotely analogous to will or striving? Will belongs to the self in its individual unity. But the weights as mere parcels of matter have no such individuality. The difficulty is as obvious to Common Sense as to science or philosophy. If it could not be met it would not only mean that the animistic view is illusory: it would be impossible to understand how the illusion could have arisen or, at any rate, how it could have persisted beyond that primitive stage in which inanimate objects are personified. The key to this difficulty is to be found in a distinction which virtually coincides with that between relatively immanent and relatively transitive action; but I have here first to consider it from a different point of view, which is better indicated as the distinction between primary or inclusive and secondary or partial tendency.

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[1] Note the distinction between effort and the making of it. It is in the making of it or in the attempt to make it that our own subjective initiative consists. It is the effort and not the will to make it which is measured by motor sensations. Sometimes, as in building a house of cards, we may be intensively active in trying to make a small muscular effort, so that our will is defeated if we make a greater.

[2] As I attempt to show later on, even this is actually experienced only in part. Cf. Book IV, chap. VI.

2. *Primary and Secondary Tendency*[1]

What takes place when I perform a voluntary action such as striking a match? One way of describing what occurs is to say that an idea realises itself. The idea of striking the match tends to pass into the corresponding movements, so that when it is sufficiently intense and dominant the movements follow—provided that I am otherwise capable of making them. This account is true so far as it goes. But it is plainly insufficient. What it leaves unexplained is that it is *I* who act, and not one of my ideas. Ideo-motor action may occur involuntarily or non-voluntarily; when and so far as this is the case I do not own it as my doing: it is rather something which happens to me. The tendency of an idea to fulfil itself may or may not form part of my activity and it may do so in varying degrees. All depends on how the idea acquires relevant dominance. If it does so because I am interested in doing what I think of, then the resulting behaviour is *pro tanto* my act and deed. The tendency of the idea to realise itself is *pro tanto* a partial phase within the indivisible unity of my action as a whole. The unity of the whole is expressed, maintained and developed through interest and attention. Interest and attention, as involving something in the nature of seeking or striving, give unity to the whole process, and make it a relatively primary action. On the other hand the so-called tendency of ideas to realise themselves, considered as a partial phase of the process, is relatively secondary. It is active tendency only so far as it is a partial factor in the total process in which primary tendency moves towards its own fulfilment or defeat. It is, we may say, an initiated, not an initiating tendency. Attention, in general, implies the same subordination of partial tendencies to an enveloping primary tendency which itself exists only by including them. There is subjective initiative inasmuch as there is an interest which requires for its satisfaction fuller knowledge or fuller presentation of its object. There are secondary tendencies inasmuch as the object tends to become more distinct, to revive its associates in past experience, to be apprehended in new relations, to enter into new associations and to give rise to bodily movements, and so forth: without these secondary tendencies the process of attending would be an impossible abstraction: on the other hand, as a function of the self in its individual unity, it can never be resolved into them.

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[1] More accurately 'relatively primary and relatively secondary'. The distinction is never absolute, except perhaps for speculative metaphysics.

It is especially important to recognise this distinction in considering the experience of making a motor effort against resistance. When I press one hand against another, or both of them against a table, I do not ascribe to the hands themselves anything analogous to will or conation. Yet I apprehend them as tending to move in a degree proportioned to my sensation of effort. Such tendencies are active inasmuch as they are partial phases of my action as a whole. But they do not give to the whole process its character of being my action. This is due to my individual initiative—to my will. The secondary tendencies are multiple, whereas the actuating will is single. In pressing my hand against the table, there are as many distinct pressures as there are distinct parts of the hand in contact with the table; but there is no corresponding plurality of distinct volitions. The secondary tendencies may be opposed to each other without being opposed to me. When I press my two hands against each other, they resist each other, but both fulfil my will. Similarly when two persons are pulling against each other at the same rope they may be in harmonious co-operation for a common end.

Partial tendencies, just because they fall within the unity of a primary active process, mutually determine each other. In their interaction each has effects beyond its own existence. In this way, the distinction between primary and secondary passes into that between immanent and transitive action.

3. *The Animistic View of Causal Process further defined*

The distinction between primary and secondary tendency enables us to understand how it is possible to interpret causal process in nature as involving activity and passivity analogous to our own doing and undergoing. The tension of the stretched bow is no more taken to be itself akin to will or striving than the felt tension of the archer's hand as he pulls the string. Both are apprehended as secondary tendencies.[1] So far as active tendency is ascribed to matter it is always in this way derivative. If we drop all reference to an initiative analogous, however vaguely, remotely and mysteriously, to our own, the word *tendency* as standing for something actual and positive loses all meaning. There is nothing left but the bare relations of co-existence and sequence, which alone are discoverable in the content of sense-experience. This is the course which has been taken by modern science. It has been led to ignore, more or less completely, as irrelevant to its own special undertaking, first, primary and, as a consequence, secondary tendency —first, immanent and, as a consequence, transitive action. Regular order of sequence is for it ultimate. This does not imply an ultimate conflict with the animistic view, unless we transform science into philosophy by assuming that what, for its own purpose, it can afford to disregard is therefore unreal. On the other hand, there really is a perpetually recurrent conflict between advancing science and the variable specific forms assumed by the animistic view in popular thinking, and even in scientific concepts which are becoming obsolete.

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[1] I do not of course mean that unreflective Common Sense draws this distinction. It does not analyse its own procedure and presuppositions.

In determining where active initiative is to be found in nature, apart from the embodied selves of men and animals, the fundamental animism of Common Sense takes different shapes in different stages of human culture. It begins with what are now generally recognised as crude anthropomorphic fallacies. Of this type is the primitive belief in 'spirits' or 'gods' as in some way actuating and controlling either such locally limited objects as the sun, a tree, a rock, a river, or wider departments and aspects of nature, such as the sky, the earth, the sea, and the generation, growth, and decay of plants and animals. 'Myth-making' of this sort becomes discredited as growing insight into the systematic unity of the material world renders it difficult or impossible to ascribe to such parts or partial aspects of it individual unity and initiative. Polytheism becomes superseded by some form of monotheism or pantheism. Active initiative is ultimately referred to one omnipresent Mind and is elsewhere recognised only in the finite and dependent minds of men and animals. Yet there may still persist attenuated survivals of primitive animism in such doctrines as that of 'substantial forms' or in the natural propensity to ascribe to bodies *inherent* 'forces' permanently belonging to them independently of their variable relations within a system.

The animistic view is not discredited in principle by the shifting and untenable shapes which it assumes in the varying stages of human development. It is not, in principle, discredited by the confusion and inconsistency found in it at any given stage. Human progress in this direction, as in others, must be tentative and groping: it can reach comparatively secure results only through trial and failure. The path traversed by science also is thickly strewn with errors, confusions and hardened prejudices. Consider, for instance, the doctrine of the four elements, of phlogiston, of the humours of the body, of animal spirits, the Cartesian theory of vortices, the absolute space and time of Newton. We are not warranted in rejecting the animistic position either on the ground that it is obviously absurd, or that it is in principle irreconcilable with the general position of science, or that in the history of mankind it finds expression in special ways which turn out to be untenable. There still remains the question whether it is reasonably referable to a natural fallacy. If it cannot be thus accounted for there is a strong initial presumption in favour of its validity. If it turns out that the only reasons which can be urged for regarding it as a fallacy are such as would lead to the conclusion that all belief in matter of fact, beyond the immediate testimony of the sense and of memory, is logically baseless, the presumption in its favour becomes very strong indeed.

Now Hume has said all that can be said for the view that it is only through a natural and explicable illusion that we seem to find in our own voluntary action a key to the nature of causal process: besides this, he has also shown most clearly that the reasons for assuming that it must be an illusion would, if consistently followed out, logically ruin the whole fabric of human knowledge, including its scientific developments. This utter scepticism is indeed the outcome of his critical scrutiny of causality as a principle of inference in matter of fact. In what follows I shall use him as *advocatus diaboli*, inasmuch as he maintains that the animistic view is and must be a natural illusion. On the other hand, I shall treat him as an ally, inasmuch as his reasons (and there are no others) for assuming that it must be an illusion, would, if they are valid, destroy all justification for inference from observed to unobserved matter of fact—all knowledge through experience.

4. *Hume's Criticism of the Animistic View*

Hume has, in the first place, to show positive reason for condemning as illusory the view that any special insight into the nature of causal process is found in what we ourselves experience in willing and striving. In the second place, he has to show how the illusion arises through psychological conditions which do not presuppose its validity. It is with the first question that we are at present directly concerned. As formulated by Hume, the question is whether in our voluntary action we can discern a *necessary connexion* between our will as cause and its fulfilment as effect. As we shall see, his whole argument is vitiated by the ambiguity of the phrase 'necessary connexion'. Hume argues as follows. If the process of willing yields any insight into necessary connexion of cause and effect, it ought to enable us beforehand to see that a volition must be followed by its fulfilment or, at least, to see beforehand why and how it is not fulfilled. 'Why has the will an influence over the tongue and fingers, not over the heart or liver? This question would never embarrass us, were we conscious of a power in the former case, not in the latter. We should then perceive, independent of experience, why the authority of will over the organs of the body is circumscribed within such particular limits.'[1] We have no such apprehension of necessary connexion in our voluntary command either over the 'organs of the body' or 'the faculties of the soul'. Hume concludes that the appearance of necessary connexion, e.g. between the clenching of the hand and the will to clench it, can arise only through constant repetition generating customary expectation.

This argument presupposes that if we are primarily aware of our own agency in willing and striving, we must be aware of it as the sole and sufficient cause of the event which we take to depend on it. It misses the mark altogether as against the view that I am maintaining, that what we are aware of is active tendency which counts only as one factor among others in determining the further course of events. In itself it is a tendency towards its own fulfilment; but it does not therefore follow that it must be fulfilled. Hume is therefore right in denying necessary connexion between a volition and its realisation. He is so obviously right that it is hard to see how any one could ever suppose the contrary. On the other hand, there is a sense in which voluntary endeavour does presuppose 'necessary connexion'. It presupposes that, when we do our part, the result, whether this is success or failure, is partially determined by other conditions. We cannot be aware of ourselves as contributing to determine what, when we do our part, is otherwise undetermined. When I will to blow out a candle the sequel admittedly does not depend merely on me. If it is otherwise undetermined, no alternative is excluded. But I cannot help to determine what is not determined at all. Thus, in being aware of ourselves as agents we are *ipso facto* aware of the presence of other factors which condition our success or failure. To feel ourselves active is to feel ourselves partners in a transaction—a total process apart from which our own action has no separable existence. This escaped Hume because he regarded a volition abstractly as a separate event followed by its fulfilment as another separate event. Hence if the word 'activity' was to mean more than mere temporal sequence, there was only one way in which he could conceive the volition as active. He could conceive it only as involving a 'causal tie' intervening between the volition and its fulfilment, and so binding them together that when the first event occurs it is necessarily followed by the second. It was then very easy indeed to show that the conception of such a tie is entirely indefensible. But his whole procedure is fallacious. In regarding activity merely as transitive and as having effects beyond itself, he loses sight of it altogether. He blindfolds himself and complains that he cannot see.

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[1] *Enquiry* (ed. Selby-Bigge, p. 65).

To understand wherein our action consists we must consider it not merely as transitive but as immanent. So far as it is immanent it is primary; it is a complex process having a peculiar and ultimate kind of unity, inasmuch as it is the development of an active tendency in the direction of its own fulfilment. This active unity is implied as much in failure as in success; it is implied in the distinction between success and failure. It is present wherever there is anything akin to trying, striving, seeking, inquiring, searching, or, in general, attending.

How does this view of our own action as immanent help to explain its transitive aspect, its efficiency in giving rise to effects beyond its own existence? We must here recur to a point on which I have already insisted. Our agency, if it is to exist at all, must always be more or less immanent; but as we experience and know, it never is or can be purely immanent. Like vital process, it always essentially involves interaction with an environment. We do our part, but the result never depends merely on us. In feeling ourselves active we feel ourselves active in relation to active tendencies which are not our own; to these we must adapt ourselves if we are to succeed, and such adaptation often requires a long process of trial and failure. Herein lies the ultimate ground of the animistic interpretation of causal process in nature. It is because we are primarily aware of other factors only as supplementing and completing our own agency within the context of one continuous transaction that we apprehend them as involving active tendencies akin to our own. For the same reason we primarily apprehend the unity of the whole, which includes the interplay of these factors with ourselves and with each other, as in some way akin to the active unity of our own lives as embodied selves.

If this is a true account of the causal animism of Common Sense, Hume, so far from having refuted it, never once came in sight of it. He was debarred from understanding it by certain initial assumptions taken over from empirical philosophy—assumptions which are not only arbitrary but are discredited by the absurd consequences to which, on his own showing, they inevitably lead.

5. *Hume's Presuppositions and their Inevitable Consequences*

Hume considers causality purely as a principle of inference in matter of fact. From this point of view he arrives at the sceptical conclusion that we can never discern any such relation between two distinct events *a* and *b* as will justify the belief that when *a* occurs *b* will follow it, or is in any degree likely to follow it. If he is right, I have no valid ground for believing that, if I hold my hand in a blazing fire, it will be burnt. I have no valid ground for asserting that it is in any degree probable that it will be burnt. He himself admits that this is an extravagant paradox. But it follows inevitably from an initial assumption which he himself takes for granted, the assumption that all distinct existences or 'matters of fact' are 'loose and separate' from each other. He regards *a* and *b* as distinct existences, if they exist or are conceivably capable of existing in different places or at different times. In saying that *a* and *b* are separate from each other, he means that, though in a particular experience taken by itself we may find that a particular *b* succeeds a particular *a*, we cannot discern in the intrinsic nature of either *a* or *b* or both any vestige of a reason why *a* should be conjoined with *b* rather than with anything else, or indeed why either of them should not exist absolutely by itself. There are indeed relations founded on the intrinsic nature of the terms related, e.g. that fifteen is the half of thirty. But the co-existences and sequences of distinct matters of fact are not of this sort. Repeated experience of the sequence *a–b* makes in this respect no difference. If there is an intrinsic reason why *b* should follow *a*, it must be discernible in any single instance. The reason which is not discoverable in any one instance cannot be revealed in any number of them. 'Experience' is as powerless as rational insight to supply any real warrant for inference from one matter of fact to another.

In another way, however, frequent repetition is found to make a difference. It makes a difference to *us*. Through the customary conjunction of a prior *a* with a subsequent *b* we come to believe, whenever *a* is known or believed to exist, that it will be or has been, probably or certainly, followed by *b* as on previous occasions. But this merely psychological fact supplies no reason why the belief should be true. We must not confuse our habit of expecting with a habit followed by the events themselves in happening. If events are really loose and separate, no repetition in experience can logically warrant any belief going beyond the 'immediate' testimony of the senses and of memory. To appreciate fully Hume's position we must set aside the acquired beliefs which we now take for granted as a matter of course. We must go back to primary data as they would be presented in a first experience such as Adam might have had when he was first created. Thus when Hume asks how we can legitimately anticipate what will happen when one billiard ball collides with another, he does not mean what we now mean by a billiard ball. For what we now apprehend as a billiard ball includes the complex system of beliefs implied in such adjectives as hard, impenetrable, having weight, which all indicate regular modes of behaviour—the 'active and passive powers' of Locke.

What then, according to Hume, are the primary data from which we start? With one important reservation we may say that they consist in the contents of purely immediate experience apprehended just as they occur from moment to moment, without reference to anything beyond themselves. The important reservation which mars Hume's consistency is that he assumes memory. We are not wholly confined to the experience of the moment, because we can remember or have the thought of what we have experienced in the past.

Hume takes for granted that all immediate experience is of the nature of sensation. Our primary data are all impressions, or the faint 'copies' of impressions which he calls 'ideas'. Desires and volitions and pleasant and painful feelings are for him merely impressions of reflection. He simply assumes that willing, striving, and attending are impressions in fundamentally the same way as a colour-sensum or a sound-sensum. Thus the conception of the self as an individual unity is excluded from the outset. The mind becomes a mere collection of successive and simultaneous impressions and images which are just as much material as mental, and just as much mental as material.

If we once accept this theory of original data, we can hardly deny that they are in Hume's sense 'loose and separate' from each other, and incapable of carrying a reference to anything beyond themselves. How then can we find such a connexion between one of them *a* and another *b* as will justify an inference from the perceived or remembered existence of an *a* to the existence of a *b*? Only if we can discern some tie, which, though the terms which it connects are in their own nature indifferent to it, yet binds them together and, so to speak, fastens them to each other as a string may tie together two parcels or a chain couple two railway carriages. According to Hume, the natural man, untroubled by philosophical scruples, does believe in a causal tie. It is what he means by such words as 'power', 'efficiency', 'force', 'activity'; especially it is what he means when he supposes himself to be active in willing.

However this idea of a causal tie arises, it is, as Hume shows, quite illusory. His main argument is that which we have already considered in its special application to voluntary process. There is no ground for denying a causal tie in the connexion of volition with its fulfilment, which is not equally valid for all occurrences supposed to be related as cause and effect. If two impressions *a* and *b* are seen to be bound together by such an intervening link, we ought to be able to discern why and how *a* must inevitably be followed by *b* just as we discern why and how fifteen is the half of thirty. The ground of the necessary connexion would not indeed be discoverable in the nature of *a* and *b* themselves; but it would be discoverable in the nature of the bond which is supposed to unite them. But this is just the sort of insight which we do not possess. It is always conceivable that *a* may not be followed by *b*.[1] If all distinct existences are loose and separate, and if the conception of a causal tie is illusory, Hume's sceptical conclusion is inevitable. Belief in any matter of fact which goes beyond the immediate testimony of the senses and memory is entirely groundless. The whole fabric of the sciences is a castle in the air. All that is left to account even for the illusion that we know the immense spatio-temporal system which we call the material world, or minds other than our own, is the alleged psychological rule that past repetition of a sequence of sense-impressions leads to the belief that when one recurs another will recur along with it.

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[1] I may add a still more fundamental reason. The tie between two impressions could, as Hume himself rightly recognises, be nothing but another impression, having a distinct existence from both. Thus the original difficulty recurs and we move in a vicious circle.

How utterly inadequate, even for psychology, this slender thread is to sustain so vast a weight, I need not stay to point out. While refusing to admit any shadow of theoretical warrant for inference in matters of fact, Hume attempts to justify Common Sense by asserting that it satisfies our practical needs. 'The ordinary wisdom of nature', he says, has not left 'so necessary an act of the mind' to our feeble human reason, but has secured it 'by some instinct or mechanical tendency.[1] If we ask why we should trust the 'instinct or mechanical tendency', the only possible answer is that practically we cannot help doing so,[2] if we are to live at all. We have no evidence that the relevant beliefs are false, and practical exigencies require us to proceed as if they were true. So far as they work in practice, we acquire the habit of trusting them. But for Hume, in contrast to modern pragmatism, they are not thereby verified; for the supposed verification would imply the same logically baseless assumption as the original beliefs. However often we have eaten bread and been nourished by it we have still no reason to expect that we shall probably be nourished by eating the next slice of bread we see. Why then should we eat the next slice? If there is no rational warrant at all for probable inference in matters of fact, the course of events beyond the actual 'testimony of the sense and memory' must be for us entirely indeterminate. We have no more reason for presuming that our hunger will be satisfied by eating rather than by doing anything else or nothing at all. We have no reason to presume that there is any way of satisfying it. The belief in causality as a principle of inference in matters of fact, if it is accepted at all, must be accepted as Common Sense accepts it, as due not to a blind impulse to believe, but to genuine insight into the nature of things.

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[1] *Enquiry* (ed. Selby-Bigge, p. 55).

[2] The reference to nature and its wisdom is of course only rhetoric. Hume from his own standpoint can know nothing of this.

6. *The Alternative View of Common Sense*

Hume's philosophy, as no one saw more clearly than himself, leads to a bottomless abyss of absurdity. Yet there is no flaw in his argument if once we admit that particular data, as we are immediately acquainted with them, are entirely 'loose and separate', so that the existence of each is self-complete and independent of the existence of the others. The question is whether we have the right thus to cut loose particular data, simple or complex, and treat them as capable of existing in isolation.

Whether as the result of custom, or instinct, or insight, we cannot now do so in practically facing the problems of life and conduct as they concretely confront us. We can indeed consider an occurrence without considering its causal conditions; but we cannot, when the significance of the question is fully realised, seriously believe that the occurrence is without causal conditions. From our present standing-ground every particular occurrence or group or class of occurrences is interwoven in the context of a whole, within which it conditions and is conditioned, however meagre may be our knowledge of what its causal antecedents and consequences are.

If we start from this position as ultimately valid instead of trying to account for it as an illusion, there is no need to seek for an intrinsic connexion or a 'necessary tie' between *a* and *b* as a condition of valid inference from the existence of *a* to the existence of *b*. The unity of the whole takes the place of the bond which Hume looks for as a link coupling *a* and *b* themselves taken in abstract isolation. Whenever an event of the sort *a* or *b* or *a–b* occurs even once, there is within the whole context of nature a complex of conditions such in its general nature as to determine an event of this kind. If instances of *a* or *b* are found to be rarely or frequently repeated, or if *b* is found to follow *a* either rarely or frequently or temporarily, the whole contains a complex of conditions determining the repetition and determining its observed rarity, frequency, or constancy. The repetition need not be, and perhaps never is, exact in the sense that a new *a* precisely resembles a previous *a*. Instances of the same general type recur with specific variations; and for each of these variations there is corresponding variation in the conditions. There is no difference without a difference that makes the difference. We cannot be sure that we have ascertained adequately what the conditions are which, within the unity of the whole, are sufficient and indispensable to determine the occurrence of any event or kind or group or series of events. But even if we cannot specify what they are, except perhaps in an extremely vague and partial way, we may have ground for presuming with various degrees of probability or improbability that they are present. Given *a*, we may have ground for presuming with some degree of probability the more or less probable presence of the conditions which, if they were present, would necessitate the occurrence of *b*. We are then justified in asserting that there is some chance of *b*, or that *b* is likely to occur, or that it is 'practically' certain to occur.[1]

But this is only an abstract and symbolic scheme, formulated at the level of philosophical reflexion, to account for the possibility of our concrete knowledge. As such it cannot of course be ascribed to Common Sense. We have still to ask what corresponds to it in concrete experience. We have to show how the germ of it may exist in primitive stages of mental development in which questions of logical analysis cannot possibly arise. What we here require is just the experience of our own immanent action as a complex process in which the behaviour of the partial factors in relation to each other presupposes the unity of the whole —the unity of the whole as the development of primary tendency in and through secondary tendencies. If this active unity were complete in itself, we should neither know nor need to know of any agency other than our own. But it never is self-complete; and, as I have argued, this is the reason why we cannot be aware of ourselves as active, without being aware of other factors which supplement our activity in a total transaction. Our own active unity, again, supplies a clue to the way in which these contributory factors are united with each other and with ourselves within a continuous context of active tendencies modifying, reinforcing, and resisting each other. This is what I call the causal animism of Common Sense. What passes as Hume's refutation of it is, as we have seen, based on assumptions which (1) are quite arbitrary, (2) are obscure and falsify the point at issue, and (3) are discredited by leading to consequences which no one really accepts as true. We have still, however, to examine the attempts which have been made to undermine it by tracing it to an anthropomorphic fallacy.

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[1] I cannot here deal with inductive probability. What I am now asserting is that such a system as I have indicated is a necessary precondition of it. I may add that on my view the fact that *a* has even once been followed by *b*, makes it less unlikely that *b* should follow it again.

7. *Is it through an Anthropomorphic Fallacy that we find in Nature an Analogue to our own Activity?*

I have argued that awareness of our own agency is indivisibly one with awareness of correlated agency other than ours, within a primary process, which includes both in interaction with each other. If the first is not illusory, the second is not illusory. They stand or fall together.

This view is ignored rather than refuted by those who find in the persistent animism of Common Sense nothing but an anthropomorphic fallacy. According to them, we first come to regard ourselves as agents through habitual experience of the sequence of volition and fulfilment; we then, by a subsequent and separate step, learn to ascribe analogous agency not only to our fellow-men and to animals, but also to trees, rocks, streams, sun, moon and stars, and inanimate objects in general. The principle involved is the propensity to interpret the unfamiliar in terms of the familiar. 'It is', says J. S. Mill, 'the natural tendency of the mind to be always attempting to facilitate its conception of unfamiliar facts by assimilating them to others which are familiar. Accordingly our voluntary acts, being the most familiar to us of all cases of causation, are in the infancy and early youth of the human race taken as the type of causation in general, and all phenomena are supposed to be directly produced by the will of some sentient being.'[1]

This does indeed explain much, but it fails to explain precisely what here requires to be explained. It supplies a good reason for the fact that we are initially prone to read into nature not only an analogue of our subjective life but the social form of subjective life with which we are familiar in ourselves and our fellow-men. Hence the propensity to ascribe to material things a distinct individuality which they cannot possess, giving rise in the infancy and early youth of the human race to personification of inanimate objects, and in later stages of culture to such conceptions as that of 'substantial forms', or of forces intrinsically and permanently inherent in bodies apart from their place in a system. But the principle breaks down when we apply it to account for the persistent tendency to interpret nature in terms of mind. It is not true, as Mill supposes, that we are far more familiar or even that we are at all more familiar with the sequence of volition and fulfilment, than with other regular sequences. I do not merely mean that we are spectators of a routine in nature (e.g. the succession of day and night) which is in no way dependent on us. The important point is that even in our own practical activity we can only set going trains of events which then take their own course. We may push a stone over the edge of a precipice, but its consequent career is beyond our control. To gain our ends we have to anticipate such occurrences, as they vary under variable circumstances, and to adjust our own initiative accordingly. Even our command of the appropriate motions of our own bodies, so far as it is not instinctive, is originally attained through trial and failure and adaptive variation. We have incessantly to accommodate ourselves to a regular course of events, which is determined for us and not by us. Familiarity with this order and familiarity with our own voluntary initiative both develop *pari passu* in inseparable unity.

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[1] *Logic*, bk. III, chap. V, § 11, p. 413.

The tendency to assimilate the unfamiliar to the familiar fails to explain the alleged illusion. But this formula does not, I believe, express the real position of Mill and those who agree with him. What they really mean is the tendency to assimilate the familiar to the familiar—to complete partial familiarity by supplying a familiar context for it. They regard the animistic interpretation of nature in all its forms and phases as an extension through a false analogy of the process whereby we recognise individual will and intelligence in our fellow-men. From their point of view this process can only be one of inference from sensible signs and tokens. The bodily appearance and behaviour of other men resemble our own; hence we take them to be embodied selves correspondingly like ourselves. It has however often been pointed out that mere resemblance in appearance and behaviour is very far from accounting for the full assurance which we have of the existence of other human minds. It may yield a point of departure,[1] but full assurance depends on the mutually responsive behaviour which makes possible mutual understanding and develops into social intercourse.

The sun, moon, and stars, trees, streams, and hills differ very greatly in appearance and behaviour from human bodies. They are indeed parts of the same material world, and so far there is a broad and general resemblance. But this, even if we could suppose it faintly to suggest the presence in nature of some remote analogue of our mental life, does not account for the persistent animism which, when one form of it is discarded, renews itself in others.

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[1] I do not mean to admit even so much as this.

The suggested hypothesis would soon be abandoned altogether in the absence of verification by responsive behaviour.

If the animistic position is illusory, the illusion has not been explained. And no cogent reason has been given why it should be regarded as an illusion at all. On the contrary, without it or some substitute for it, there seems no ultimate warrant for inference in matter of fact. Hence a heavy *onus probandi* rests on those who reject it. To complete their case they have to show directly that it is false, to find a substitute for it which will be logically equivalent, and to account for the illusion through psychological conditions. It may safely be asserted that no one has yet fulfilled any of these requirements.

8. *Concluding Remarks*

The causal animism of Common Sense has fairly stood the test of cross-examination on its own ground. However untenable certain special and shifting shapes may be which it has assumed in various stages and phases of human development, the general principle remains unshaken by direct criticism. There is therefore a strong initial presumption in its favour. We have yet to consider how far it harmonises with other relatively independent results of philosophical inquiry. But if it stands this test also, the philosopher is bound to accept it.

Chapter III

TELEOLOGICAL ANIMISM

1. *What is meant by Teleological Order?*

We find in the material world a systematic order which does not consist merely in the conformity of the course of events to general laws, irrespective of the special nature of these laws as empirically discovered, and of the concrete situations in which they are exemplified. Under given conditions certain results follow according to general rules, and vary regularly with variation in the conditions. But the mere generality of the rules cannot of itself ultimately account for the existence and correlation of the actual factors and processes which, in the concrete history of the world, constitute the field of their application. The term 'teleological' distinctively designates systematic order in the concrete union of actual factors and processes—a systematic co-adjustment of part to part within a whole. It is found in its most highly developed form in the living organisms of plants and animals. But it is also present, e.g. in the constitution and behaviour of atoms and molecules, and in the whole system of chemical reaction. It pervades the whole course of nature, and it is disclosed with ever-increasing richness and fullness as science advances. It could not be confined within the limits of living organisms; for life is essentially a transaction between organism and environment, a process which involves both within the unity of a single system.

If from the point of view of physical science we attempt to account for teleological order as we find it at present, we can do so only by going back on past history. We must trace the present concrete situation to prior concrete situations, and these again to others more remote. This historical regress could have a limit only on one assumption. It could have a limit only on the assumption of ultimate laws which are principles of organisation, so that, however chaotic the initial distribution may be, the cosmic order which we now find must arise from it. But the fundamental laws of physical science, such as that of gravitation or the conservation of energy, are not teleological. They are in themselves indifferent to teleological order, and cannot ultimately account for it.

On the other hand, teleological order is a precondition of the existence and progressive development of physical science as a human enterprise. The existence of science presupposes not only that there are general laws, but that these laws are discoverable with increasing adequacy, precision and certainty. This would not be possible if the course and constitution of nature were not preadapted to our intelligence. It is not enough that likeness in results shall depend on likeness in conditions, and variation in the results on corresponding variations in the conditions; it is also indispensable that the likeness and difference shall be discernible and definable by the human mind. This might have been otherwise.[1] The course of events might have been an incessant flux without any definite and recognisable recurrent pattern of process and structure. There might, for instance, have been no natural kinds, such as the chemical elements, or the species and genera of plants and animals. There might have been no rhythmical order such as is presented in the alternation of day and night or of the seasons. Even the relative unities which we call 'things' and 'events' might have been indistinguishable. There might, in a word, have been no teleological order. Yet without a high degree of teleological order, not only human science but the very existence of human beings would have been impossible.

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[1] Cf. Venn, *Empirical Logic*, chap. iv, pp. 95–98.

2. *Teleology and Common-Sense Animism*

I have so far done my best to indicate what I mean by teleological order without using words implying a reference to mind as its source. I have not used such words as 'plan', 'design', 'contrivance', 'end', 'aim', 'purpose'. In so proceeding I have been doing violence to Common Sense. For Common Sense, when it is not warped by one-sided philosophical or scientific preconceptions, teleological order in the material world is derivative. The more fully and vividly its presence is realised, the stronger is the tendency to seek its source in something akin to our own will and intelligence. On the other hand, the teleological order which characterises mind itself is taken as primary and as needing no further explanation. Science, in the earlier stages of its development, makes free use of the concept of teleological order as a principle of explanation and inference in matter of fact. The attempt to banish 'final causes' as barren virgins and to substitute a 'mechanical' view of nature is comparatively modern. The teleological method of approaching scientific problems is to start from the concept of a certain type of teleological order, e.g. that of a living human organism, and on this basis to determine how the parts must behave and interact if they are to fulfil their distinctive functions within the total scheme. 'Mechanical' procedure takes an opposite course; it attempts to explain the whole through the interaction of the parts as determined according to laws which hold for the material world in general. From this point of view, biological science simply consists in the application of physical and chemical analyses to the phenomena of life. The term 'mechanical' is appropriate to this method because no other is possible from the nature of the case in explaining the working of machines made and contrived by human beings.[1] Human beings in planning their mechanisms merely attempt to foresee what special results will follow from general rules under a set of special conditions hypothetically assumed. Hence the only way of explaining the working of such machines is through the general laws on which their inventors relied in constructing them.

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[1] Originally, as in Descartes and Hobbes, the term 'mechanical' carried the further implication that the only ultimate laws of interaction were those

Until quite recent times, science has agreed with Common Sense in treating the teleological view as inseparable from the animistic. The mechanical method supersedes both at once. It is easy to see why this is so. The teleological method uses the plan of the whole as affording a clue to the behaviour and interaction of the parts. But this is difficult except on the assumption of a directive agent working towards the fulfilment of the general plan so as to control and co-ordinate the behaviour of the parts in conformity with it. Such an agent is conceivable only through the analogy of human purpose. In biology, which is the last stronghold at once of animism and teleology as scientific principles, the old vitalism assumed a guiding agency, called the vital principle, within each living organism. Of late there has arisen a new vitalism, which attempts to employ the teleological method, while ignoring, for the purposes of biological science, its animistic implications, and not only ignoring, but denying a special 'vital principle'. This position is most adequately represented by Dr Haldane:[1] 'It is because of the fundamental character which living organisms possess of maintaining and reproducing their structure, activities, and relation to environment, that I am quite unable to accept the mechanistic conception of living organisms as outlined by Descartes, and generally accepted by the last generation of biologists. The life of an organism can only be interpreted or described as

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treated by the science of mechanics. Thus living bodies were regarded as essentially similar to pieces of mechanism such as a watch. But this implication of the word is now obsolete or should be so.

[1] *Proc. of Aristotelian Society*, supplementary vol. III, 1923, pp. 69–70 and p. 71.

the behaviour of a whole. It cannot be analysed, as we analyse the working of a machine, into a sum[1] of the separate behaviours of the parts.' 'Into the physiology of the senses biological teleology enters at every point....We also meet with this teleology everywhere else in physiology and anatomy, while in practical medicine and surgery teleological conceptions seem to me absolutely essential. If we eliminate them we reduce most of biology and medicine to an unintelligible chaos.' Dr Haldane's position has been sharply attacked. But I do not find that his opponents positively deny what he positively asserts concerning the usefulness of the teleological method in biology and medicine. Though they are not clear on the point, their arguments seem to be all clearly directed to show, not that the teleological method is useless, but that it is no substitute for the mechanical, which alone, as they contend, satisfies the requirements of science. The results of the teleological method are, at best, only provisional; they set problems for physics and chemistry, and it is arbitrary dogmatism to say that these problems are, in principle, incapable of solution.

With this burning question we are not here concerned. What does concern us is Dr Haldane's attempt to separate, for scientific purposes, teleology from animism. Does this mean that it is really separable? Emphatically not. Dr Haldane himself only takes it apart by a deliberate abstraction in which he is all the while aware of what he is, 'for scientific purposes', neglecting. His philosophy as distinct from his science is essentially animistic,[2] and it is largely because his opponents do not share in this philosophy that they find his use of teleological concepts so bewildering. It is also worth noting that some biologists who otherwise agree with him think that, even for the purposes of science, biological conceptions ought to be tinged a little more deeply with psychology. This position is advocated by E. S. Russell. 'I agree', he says, 'that it is futile to talk of the mind of a plant or of a developing embryo.'[1] 'Any form of dualistic vitalism is inadmissible and unhelpful in practice.'[2] 'My point is that in order to arrive at a biological conception of the living thing which shall be distinct from the mechanistic, and shall approximate more closely to the living reality, it is necessary to consider the living unit as having properties or powers, which...we must conceive on the model of psychical activities, though they be much simpler, vaguer, less explicit than the psychical activities known to us in our own experience.'[3] 'Persistence of individuality in time, active tendency, unifiedness and flexibility of response are clearly apparent in organic as well as in conscious activity. The characteristics which show up most clearly the inadequacy of the materialistic method are the very characteristics which show the closest analogy with the processes of conscious life. Perception, conation, memory, all have their simplified and undeveloped counterpart in organic activities.'[4]

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[1] 'Resultant' would be a better word.

[2] Of course only in the wide sense in which I use this term.

I conclude that not only does Common Sense interpret teleological order as involving some counterpart of our subjective life, but that science itself, in so far as it uses teleological conceptions in its own work, is, directly or indirectly, committed to some form of animism. This is equally true whether, with Mr Russell, it attempts to make scientific use of the animistic position, or, with Dr Haldane, deliberately ignores it for scientific purposes. Dr Haldane and Mr Russell are divided from each other by a very thin partition.

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[1] *Proc. of Aristotelian Society*, supplementary vol. III, 1923, p. 80

[2] *Ibid.* p. 83.

[3] *Ibid.* p. 80.

[4] *Ibid.* p. 84

3. *This View is not, in principle, an Anthropomorphic Fallacy*

The animistic interpretation of teleological order is not due to a blind propensity. It claims to be founded on rational insight into the nature and implications of the data which work within the range of Common Sense. It has therefore a strong initial presumption in its favour, unless it can be shown to be fallacious from its own point of view, without appeal to considerations which are inaccessible to Common Sense. If it stands cross-examination on its own ground, it may none the less have to be rejected because it fails to take account of difficulties and of possible alternatives which are brought to light in the special development of philosophy.[1] But the burden of proof will rest on its opponents. Those who hold that, on its own ground, it is fallacious are bound to show that it is traceable to an anthropomorphic illusion. They begin by taking for granted that it is based on inference from the analogy between the products of human will and intelligence on the one hand, and the teleological order of nature on the other; they have then no difficulty in showing that the inference is unsound.

The position attacked is familiar to us in popular presentations of the design argument for the existence of God, such as Paley's. Paley compares the co-adaptation of the works of a watch, whereby they co-operate in producing uniform movements of the hands measuring the lapse of time, with the adaptation of the parts of the eye as subserving sight. He contends that as with the watch so with the eye, the parts must have been 'put together for a purpose'. As the watch is due to human design, so the analogous arrangement in the eye must be due to a superhuman design. The weakness of the argument from mere analogy is not far to seek. It ought logically to lead to a conclusion the inverse of that which it pretends to establish. It would justify us in assimilating the watch to the eye rather than the eye to the watch. The works of man are relatively rare and exceptional samples of the teleological order which we find in the world. As Hume contends, it seems preposterous to take as our rule in judging nature as a whole, 'the operation of one very small part of it, to wit man, upon another very small part of it, to wit that inanimate matter lying within his reach'.[1] We trace the teleological order of the world to a prior teleological order in the preformed plan present to the mind of its maker, and in the mental and bodily processes whereby he forms and realises the plan. But mere analogy supplies no ground for regarding mental order as primary and all other teleological arrangements as derivative. On the contrary, it ought to lead us to treat the mental order as a special, limited, and transient phase of teleological order, more especially as this is found in living organisms. If we regard the design argument as an inference from mere analogy, it collapses, at the touch of criticism, like a pricked bubble. But the sceptic who is content to dispose of it in this way overreaches himself by proving too much. He makes it impossible to see how the fallacy can have arisen. For the weakness of the supposed inference is written on the face of the facts, and stares Common Sense in the face. How then can it appeal *primâ facie* to Common Sense as undeniably cogent and overwhelmingly persuasive? Its apparent cogency cannot really rest on mere analogy.

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[1] I do not separately refer to science, because it is the business of philosophy to judge of the relevance and significance of scientific discoveries.

The philosophical sceptic, Philo, in Hume's *Dialogues*, insists with great force and clearness on the logical perversity of making a little part of nature the rule for the whole. But, as 'a man of common sense' he remains profoundly dissatisfied with his own argument. Without any direct attempt to meet this and other more recondite difficulties, he declares himself, in passages which do not seem to be ironical, in favour of mind as the ultimate source of teleological order. 'A purpose, an intention, a design, strikes everywhere the most careless, the most stupid thinker; and no man can be so hardened in absurd systems, as at all times to reject it.' 'In many views of the universe and of its parts...the beauty and fitness of final causes strike us with such irresistible force that all objections appear (what I believe they really are) mere cavils and sophisms; nor can we then imagine how it was ever possible to repose any weight on them.' 'I must confess that I am less cautious on the subject of Natural Religion than on any other; both because I know that I can never, on that head, corrupt the principles of any man of common sense, and because no one, I am confident, in whose eyes I appear a man of common sense, will ever mistake my intentions.'[1]

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[1] *Dialogues on Natural Religion* (ed. Bruce McEwan), pt. VII, p. 93. Mr McEwan's introduction should be consulted.

For Hume himself 'common sense' means a blind instinctive propensity to believe without reasons. 'There are difficulties both with regard to the senses and all science' which 'in a regular logical method are absolutely insolvable. No sceptic denies that we lie under an absolute necessity, notwithstanding these difficulties, of thinking and believing and reasoning with regard to all kinds of subjects, and even of frequently asserting with confidence and security.'[2] His position is the same as it is in dealing with causal inference. According to him the last word that can be said is that, in the absence of insight, our practical needs imperatively demand that we shall trust blind instinct.

In treating causality, I have already pointed out that this form of pragmatism is untenable. It is equally indefensible here. Common Sense is not blindly impelled to believe, but claims to see that the biological order which is found in the material world and is, so to speak, focussed in living organisms, presupposes the operative presence of something essentially akin to our own minds. Whether we accept or reject the claim, we must accept or reject it on its own terms. If what appears *primâ facie* as insight can be traced to a fallacious inference by analogy, we must condemn it altogether as mere illusion. We must not substitute for it a blind propensity, which even if it existed could have no pretence to authority.

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[1] *Dialogues on Natural Religion* (ed. Bruce M^cEwan), pt. x, p. 141, and pt. xii, pp. 164–65.

[2] *Ibid.* note to p. 174.

4. *Its True Nature and Justification*

What seems evident to Common Sense is that matter considered in abstraction from mind is in its intrinsic nature indifferent to teleological order, and that mind, on the contrary, is essentially teleological; and that therefore the teleological order which is actually found in the material world must be accounted for by the operative presence of mind in some form or other.

We have to allow for the possibility that this position may be upset by the advance of science and philosophy, revealing difficulties or tenable alternatives which were previously unsuspected, e.g. the conception (if it be tenable) of something which is neither of the nature of mind nor of matter but the source of both. In the absence of such objections the Common-Sense view holds the field, so that if the results of philosophical inquiry turn out to support rather than weaken it, it will also lend independent support to them. The general principle cannot be upset merely by pointing out anthropomorphic fallacies in its application. There will always be a teeming source of error in the tendency to assimilate mind in the universe to mind in the special form in which it is found in human beings; but the general principle of interpreting the not-self in terms of the self is not thereby affected. The point is that the word 'mind' has meaning for us only because we ourselves are minds. This remains true whether we conceive mind in nature as inferior or superior to our own. Even if we regard it as mind-stuff or as unconscious mind, still in conceiving it as mind at all we have no other clue to our own meaning except the analogy of our own feeling and will and intelligence. On the other hand, if we regard it as a universal mind transcending the limiting conditions of finite existence, between this divine mind and our own there is, as Hume maintains, 'an immeasurable because incomprehensible difference', and to deny or ignore this is an anthropomorphic fallacy. But it is an incomparably greater and graver error to treat it as not being mind at all. Mind is not the less mind but the more so, because it is incomprehensibly greater and more perfect than our own.

Chapter IV

AESTHETIC ANIMISM

1. *The Aesthetic Interest in General*

The aesthetic attitude is in one way fundamentally akin to play. In it the subject finds satisfaction in the mere play of attention with its object. The object may be, and most often is, imaginary or fictitious. We are not, in aesthetic enjoyment, concerned with its actual existence, past, present or future. Reality is presupposed only inasmuch as all fiction, in various ways and degrees, is founded on fact.

It follows that aesthetic is in principle distinct from both practical and theoretical interest. It is not directed to the satisfaction of animal cravings and appetites; or, in general, to the pursuit of ends by the contrivance and use of means, even when the ends are high and noble. It is only when we exchange practical endeavour for contemplation, and dwell on the peculiar fitness and neatness of the adaptation of means to an end that aesthetic pleasure arises. In the aesthetic attitude we do not seek to do anything with an object, but only to enjoy it. On the same principle, aesthetic satisfaction is essentially distinct from the satisfaction of theoretical curiosity. It is not the pleasure of finding answers to questions, solutions to problems, theories explaining facts. The aesthetic object is not something to be 'pondered, searched, probed, vexed and criticised'. To dissect is to murder.

When we have thus set aside practical and theoretical interests, the mind may still be vividly and intensely active in relation to its object, drinking it in as a bee drinks in nectar from a flower.

2. *Animism as a Source of Aesthetic Interest*

What is it in the object which elicits and sustains this interest? I am not concerned with this question as a whole. It is needless here to discuss that economy of attention which is conditioned by aesthetic 'form', by unity in variety, harmony, proportion, etc. Whatever importance we may attach to such principles, they do not, when abstractly considered, account for the difference between the beauty of a vase and the beauty of a sunset or of a human face. Considering content rather than form, the principle which is all-important for my present purpose is that the field of aesthetic enjoyment becomes comparatively narrow and insignificant if we take from it the presence of mind so as to leave only mindless matter; and more especially this is true of the aesthetic enjoyment of nature as well as of human life. However interesting the human body, considered merely as a material system, may be to science, aesthetic interest centres mainly in the body as animated by a mind. Similarly, the higher emotions aroused by the beautiful and sublime in nature presuppose in nature something akin to and essentially one with our own mental life. This is what we may call aesthetic animism. It finds most distinct and definite expression in literature and art; and I shall illustrate it mainly from literature. We must, however, bear in mind that literature and art are social possessions, which could not exist if they did not appeal to a public, and ultimately to Common Sense.

3. *Relation of Aesthetic to Primitive Animism*

Wordsworth in Book IV of the *Excursion* attempts to trace the belief in nature-gods and spirits to aesthetic motives.

> Sunbeams, upon distant hills
> Gliding apace, with shadows in their train,
> Might, with small help from fancy, be transformed
> Into fleet Oreads sporting visibly.

Wordsworth was wrong. The primitive belief in spirits and gods somehow present and operative in sun, moon, and stars, in mountains, streams and trees, had not, in the main, an aesthetic origin. None the less primitive animism supplied ready-made material for the aesthetic enjoyment of nature, and was itself transformed by poetry and art.

The aesthetic value of such myths did not cease when, with the advance of knowledge, they came to be recognised as mythical. Nature-spirits still yielded, for those who had no serious belief in their existence, a means of vividly representing a life in nature mysteriously akin to our own. We can still, like Wordsworth, sympathise with 'the pagan suckled in a creed outworn'; and for George Meredith the phrase 'mother-earth' expresses no mere faded metaphor but a vital though mysterious belief which gives him the key to the whole problem of human life and destiny.

In the main, however, the aesthetic enjoyment of nature has, in modern times, developed independently of the old myths; it has done so without ceasing to be animistic. In what follows I shall attempt to show how thoroughly animistic it is. For illustration I shall confine myself mainly to literature in poetry and prose, and I shall begin more especially with Shelley.

4. *Shelley's* Skylark *and* West Wind

From the point of view of pure science we distinguish sharply animals as embodied selves from inanimate matter, and even from living matter which is not regarded as actuated by an individual mind. Where, on the contrary, the aesthetic feeling for nature is intense and sustained, this distinction is blurred: in the antithesis between Nature and Man, beasts and birds are grouped with clouds and streams and trees rather than with human beings. The reason is that the material world in general is felt to be instinct with a life which is inseparable from the presence of mind, however mysterious this may be. The modern nature-poet does not, indeed, as a rule seriously ascribe to wind or sea or sky individual minds of their own. They are rather points of contact through which he feels himself in intimate communion and companionship with the universal life. Animal life has for him a like significance. The individual mind of the animal is indeed recognised, but its main aesthetic value belongs to it only through the sense of its kinship and community with the inner life of nature on the one hand, and of man on the other. Aesthetic emotion is the 'wine' of which Emerson speaks,[1] 'the wine of wine, blood of the world' which gives the power to

> Float at pleasure through all nature;
> The bird language rightly spell
> And that which roses say so well.

Shelley's *Ode to the Skylark* supplies a full typical illustration. His set subject is a singing bird. But the bird is for him no mere bird, as it is for the biologist, or the animal psychologist, or the ploughman in prosaic mood. It is not and never was a bird but rather a 'blithe spirit'. The word 'spirit' points to a mystery which the poem seeks, not to penetrate, but rather to intensify by vividly realising its existence and nature.

> What thou art we know not;
> What is most like thee?

The question leads to a flood of what he feels to be analogies. The lark singing in the sky is like a cloud of fire winging the blue deep; it is like the moon raining out its beams from one lonely cloud; it is like a rose embowered in its own green leaves; it is like the sound of vernal showers on the twinkling grass. But how, we may ask, is the lark singing in the sky like a rose among the leaves? Take a British Flora and look up the description of the rose; you will not find anything to justify Shelley. For him the rose is no mere rose but a spirit. So regarded it is like the lark, which also is for him a spirit and not a bird. The lark, the rose, the clouded moon, and the vernal showers agree in being focal points in which for him is expressed an inner life in nature akin to and one with his own. This is clearly shown by the way in which he mingles indiscriminately analogues drawn from human life with analogues drawn from nature. The lark is likened to 'a poet hidden in the light of thought', just as it is likened to showers upon the vernal grass. But it is in the concluding verses that the spirit of the skylark is most directly connected with the spirit of man, and, as befits a lyric poem, with Shelley's own mental life.

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[1] Emerson's *Bacchus*.

Teach me half the gladness
That thy brain must know,
Such harmonious madness
From my lips would flow,
The world would listen then—as I am listening now.

If the set subject of the nature-poet is for him significant mainly as bringing to a focus the universal life in which 'all things, by a law divine in one another's being mingle', it will in this respect make no essential difference whether this focus is a bird or a flower, a kitten or a sunset. Thus the West Wind is to Shelley no mere wind, even as the lark is no mere bird. It is a 'wild spirit', akin however remotely to that of man, and in particular to his own.

Make me thy lyre, even as the forest is:
What if my leaves are falling like its own!
The tumult of thy mighty harmonies
Will take from both a deep, autumnal tone
Sweet though in sadness. Be thou, Spirit fierce,
My spirit! Be thou me, impetuous one!

The aesthetic attitude may be similar even where the ostensible subject of a poem is a human being, e.g. in Shelley's *Epipsychidion*. In Meredith's *Love in the Valley* and in many of the songs of Burns, the human interest is more independent but is still throughout blended with the interest in nature.

5. *The Sublime in Nature and Human Life*

What stands out as great and heroic in human nature is most impressively disclosed in the struggle against overwhelming evil. Hence the enjoyment of the sublime in human life is mainly the enjoyment of tragedy. How is it that this enjoyment is spoiled neither by our own comparative weakness and insignificance nor by the tragic pain and evil? We should shrink with dismay from the prospect of being ourselves involved in the tragic situation. How is it that as spectators we find it a source of high aesthetic satisfaction? Without attempting a full answer to this ancient question, we may at least lay down one condition. There must be some kind and degree of sympathy between us and the tragic characters. Owing to our common human nature, we must in contemplating them feel ourselves sharers in what is transcendently great, good, strong or intense in human life as represented by them, however far we may fall short of it ourselves.

A like question arises and requires a like answer when we turn from the sublime in human life to the sublime in nature. The situations enjoyed have, as Schopenhauer says, a 'hostile relation to the human will' which 'is menaced by the irresistible predominance of their power or sinks into insignificance before their immeasurable greatness'.[1] Yet in contemplating them we feel ourselves exalted and even exultant rather than crushed or dismayed.

Again, to quote Schopenhauer, suppose that 'we are abroad in the storm of tempestuous seas, when the mountainous waves rise and fall, dash themselves furiously against steep cliffs, and toss their spray high into the air; the storm howls, the sea boils and the peals of thunder drown the voice of storm and sea. Then, in the undismayed beholder, the two-fold nature of his consciousness reaches the highest degree of distinctness. He perceives himself on the one hand as a frail individual—which the slightest touch of these forces can utterly destroy—and, on the other hand, as the eternal, peaceful, knowing subject, the condition of the object, and therefore the supporter of this whole world; the strife of nature only his own idea'.[1] In the close of this passage, Schopenhauer interprets the aesthetic experience in a peculiar way in terms of his own philosophy. But it is easy to set aside the special turn which he has given to a general principle. The general principle is that in the complex experience of the sublime the subject does not feel the 'stupendous might of nature' as merely foreign to his own being as an embodied self. Rather he feels it as embodying something essentially akin to himself—something with which he is in sympathetic communion.

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[1] *The World as Will and Idea*, tr. Haldane, vol. 1, pp. 260 sq.

Between this aesthetic attitude and that of abstract science which endeavours to rid itself of animism altogether, there is, not indeed a real inconsistency, but a sentimental antagonism. The mind of each is repellent to the other. Treat 'the hurricane which lays waste and almost annihilates whatever it meets' merely as a change of position in the particles of air and its sublimity is lost.[2] Compare a storm as described by a poet and by a meteorologist. If we regard the material world in general as merely material—as a vast mechanism without any of the anthropomorphic implications of the word 'mechanism'—I do not say that no sublimity is left. But it is not the sublimity of nature. It is rather the gigantic tragedy of the loneliness of man in a desert universe.

6. *Further Illustration*

I have so far taken examples which illustrate the feeling for nature in its most pure and concentrated form. For this very reason they do not perhaps appeal directly to so wide a public as others in which human life is the primary interest, nature being introduced mainly as its scene and setting. Here aesthetic animism is implied in the interweaving of man and nature in the unity of one aesthetic context. They are blended in a way which is inexplicable if the material world is regarded as absolutely disparate from and discontinuous with human feeling and striving.

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[1] *The World as Will and Idea*, tr. Haldane, vol. I, p. 265 (condensed).

[2] Thomas Brown, *Lectures on the Human Mind*, vol. III, p. 152.

Shakespeare continually draws nature into the action of his plays, e.g. in the moonlight nights of *Romeo and Juliet*, the storm in *King Lear*, the spell-bound night of the *Midsummer Night's Dream*.[1] Passing to later times, it may suffice to refer to the part played by nature in innumerable novels, from Scott and Goethe to writers of the present day. Aesthetic animism is not intense and emphatic in Scott as it is in Wordsworth and Shelley; but in no writer is the character of natural scenery more intimately intermingled with the characters of human beings in one massive total impression. Of later writers, we may single out among a multitude of less distinguished names, Hardy, Meredith and Conrad. In Hardy's *Return of the Native*, for example, the character of Egdon Heath penetrates and gives its tone to the whole novel.

7. *Metaphor as Evidence of Common-Sense Animism*

In giving particular examples of aesthetic animism we inevitably think first of instances which attract notice because they stand out in relief against the background of ordinary experience. We may indeed argue that those relatively conspicuous instances presuppose a more widely diffused mental attitude of essentially the same kind which escapes notice simply because it is a matter of course. But further evidence of this is desirable; and it is supplied by the metaphors which are ingrained in the structure and vocabulary of ordinary language. This evidence covers animism in general, and not merely its aesthetic phase. The reason why I introduce it under this special head is that metaphor is not merely useful as a means to an end, but is also in itself a direct source of enjoyment; and that this enjoyment constitutes in large measure the sustaining interest through which it arises and develops. The presence and nature of the direct pleasure in metaphor is shown by the contrast when it is absent—e.g. by the dry and repellent character of the technical terminology or abstract symbolism from which it is banished. $\frac{1}{2}mv$ is a dry formula. When Bacon speaks of 'dry light' his language is by no means dry, but moistened by metaphor.

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[1] For Shakespeare cf. A. Biese's work, *The Feeling for Nature in the Middle Ages and Modern Times*, pp. 166–81. This work is of much value for the whole topic with which it deals.

Under the term *metaphor* I include all use of the same language to describe what occurs in nature and what occurs in the life-history of embodied selves. Metaphor of this sort may pass either from man to nature, or from nature to man; we speak of a furious storm and also of a storm of fury. The important point is that the same language is used of both and is felt not to be incongruous with either. The fundamental nature of metaphor is clearly revealed in an intermediate class of cases, in which the transition is from one phase in the life-history of the embodied self to another—from processes involving sense-perception and motor-activity to the more inward process which takes the form of trains of ideas. When we speak figuratively of 'taking a leap in the dark' the metaphor is from a man actually leaping in the dark—an activity essentially involving mind as well as body.[1] It is in principle otherwise when we speak of water leaping and tumbling or flinging itself from a height. Such language would not be felt and enjoyed as appropriate, if the water was apprehended merely as a material phenomenon, and not as somehow expressive of an inner life in nature akin to our own. The metaphors which pass either from nature to man or from man to nature are without point and relevance if nature is regarded as mere matter, or man as mere mind. The use of such words as 'spirit' and '*anima*' has been rashly taken as evidence that primitive man took a purely materialistic view of that which feels, thinks and wills. But so to argue is to forget that air and breath are not, for the primitive mind, what they are for the abstract science of the modern chemist. When Hobbes mockingly says that inspiration, 'taken properly', is 'the blowing into a man of a thin and subtle wind',[1] he merely shows that metaphor becomes pointless and absurd when the animism which it presupposes is ignored.

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[1] Illustrations of course might be multiplied without end. Hobbes supplies good examples in his comparison of the life of man to a race. *Eng. Works* (ed. Molesworth), vol. IV, p. 53.

8. *Is Aesthetic Animism an Illusion?*

Is there any likely way of accounting for aesthetic animism as an illusion arising from assignable psychological conditions? It may perhaps be said that it does not even claim to be more than a play of imagination which it is sheer perversity to treat as serious belief. I reply that what gives interest and significance to play in general, and especially to imaginative play, is its connexion with what is taken to be real. Fiction is insipid except in so far as it is founded in fact. A little girl's attitude towards her doll is one of sustained make-believe; but the make-believe presupposes belief; the source of her absorbing interest in the doll is the existence of real babies and real motherhood. Aladdin's lamp is a mere fancy, which, taken by itself, is as inept as it is absurd. What gives it point is its bearing upon the lives of human beings such as Aladdin and his mother. The fiction in *Hamlet* serves to exhibit in a vivid, concentrated and penetrating way certain aspects of human life and character. In like manner such poets as Shelley, Goethe, Meredith and Wordsworth use imaginative fiction to bring home to themselves and others a mystery which they cannot otherwise express in a vivid and satisfactory form—their communion with something in nature akin to their own mental life. This, it should be added, is the view which they take of their own work. Their aesthetic animism is inseparably blended with their philosophy and religion.

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[1] *Eng. Works* (ed. Molesworth), vol. III, p. 394.

But may they not be mistaken? May not the mind which they seem to find in nature be merely a projection of themselves? On this view we are like the dog in the fable who jumps into the water after the reflection of the bone in his own mouth; 'we receive but what we give' and 'only in our life doth nature live'.

Supposing aesthetic animism to begin in this way, it seems incredible that we should persevere in ploughing the sands without realising that it is only sand that we are ploughing. The advance of physical science and practical experience in fitting mechanical means to mechanical ends ought to destroy the supposed illusion; but, on the contrary, the original animism is only transformed, and in its new shape becomes even more complex and intense. This seems inexplicable unless in the aesthetic experience we have an independent revelation of an aspect of concrete reality which science, owing to the conditions of its existence, tends to ignore. Further, the statement that 'we receive but what we give', if taken literally, is in direct conflict with facts. It is as false in reference to nature as in reference to our fellow-men and animals. It is indeed so far true that it is only because we are ourselves minds that we can know minds other than our own, and also that our knowledge of other minds is conditioned and limited by the nature of our own mental life. But it is not so limited and conditioned that other minds, as we are aware of them, are merely reproductions or duplicates of our own. If this were so the interest and value of intersubjective intercourse would almost entirely disappear. And in aesthetic communion with nature it is even further from the truth to say that the mind which seems to greet us there is merely a copy of our own experience. On the contrary it has a character of its own widely different from ours; and its presence is most intensely felt when the difference is felt as immeasurably great and incomprehensibly mysterious. Meredith's mother-earth is not for him just another Meredith, and it is not just another Wordsworth that Wordsworth felt as 'something far more deeply interfused, whose glory is the light of setting suns', etc. Coleridge's own reason for asserting that 'we receive but what we give' is that what we find in nature varies as we ourselves vary. This is in a large measure true. It varies in youth and in age; it varies with our preformed associations, with our passing moods, the state of our health, our freshness or fatigue, and in general with our organic sensations. But we do not merely ascribe to nature a copy of our own state at the moment. On the contrary, the relation may be one of sharply marked contrast; both in joy and grief we may feel a similar landscape as the expression of a gladness which is not our own; but in grief we feel painfully out of sympathy with it, as we should with the exuberant spirits of a friend; whereas when we are joyful it independently supports and intensifies our joy, as a friend would whose cheerful mood was attuned to our own. In general, Coleridge's argument is adequately met by pointing out that it would apply also to human relations. The view we take of our fellow-men varies greatly as we ourselves vary.[1] As our own experience changes, human life, as well as nature, may at one time appear as if through a 'luminous cloud', at another, as if under a 'shroud'. In neither case are we, on this account, justified in denying that we are really dealing with a mental life other than our own.

9. *Summary of the General Case for Animism*

I have now examined independently three different aspects of the tendency to seek and find in nature a correlate of our own mental life; the aesthetic, the causal and the teleological. The result reached is that in each of these directions the animistic position is unshaken. Internal criticism reveals no cogent ground for treating it as other than what *primâ facie* it claims to be, a genuine insight into the nature of reality as this confronts us in concrete experience. I have now to add that the several lines of argument which I have followed separately must be taken in combination, as mutually supporting each other. They are strands interwoven in the same rope.

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[1] Consider, for example, the effects of jealousy.

I do not, however—let me remind the reader—put forward this statement of the case for animism as finally conclusive. What I maintain is that there is a strong initial presumption in its favour which can be upset only by independent reasons for regarding it as illusory. Physical science, owing to its very nature and function, which leads it to ignore the question at issue, cannot supply such reasons. If they are discoverable at all, they must be discovered by philosophy in its endeavour to construct a coherent account of the universe. If the further development of philosophical inquiry in all directions yields results which are not only compatible with the fundamental truth of what I call animism, but lend it independent support, our only reasonable course is to accept it. If it is not absolutely certain, we incur a far less risk of error in accepting than in rejecting or ignoring it.

There is a further question. The animistic view admits of very different interpretations. If we accept it, which of these are we to select? I have, so far, left open such alternatives as mind-stuff, monadism, a world soul, a single creative mind, etc. Even at this point we may venture to assert that the claims of mind-stuff theories are, *primâ facie*, weak; they are so because the tendency to find in nature a counterpart of our mental life seems essentially a tendency to find in it some correlative of our individual unity, and the word 'stuff' is expressly intended to exclude this. As for the other alternatives, so far as they are really incompatible, I leave open the decision between them for further investigation. I would only add here that we must include among them the doctrine that the material world is 'created' by a divine mind. The word 'created' no doubt stands for a mystery impenetrable by finite beings. But it must at least mean that what is created is immediately and absolutely dependent in its nature and in its entire existence on its creator. There is no room for any distinction between dependent beginning and independent continuance. If, therefore, matter is created by a being who is a mind, it is wrong to hold that matter can have a separate being and nature of its own which is in any manner or degree independent of the mind which creates it. But animism involves the denial of any such independence in matter. Hence if the doctrine of a creative mind is right, the animistic view of nature is fundamentally valid.

BOOK TWO

THE PSYCHO-PHYSICAL PROBLEM

Chapter I

THE NATURE OF THE PSYCHO-PHYSICAL PROBLEM

1. *Introductory*

The relation of matter and mind may be approached in two ways, which, though they ultimately converge so as to raise common problems, yet, at first sight, seem to fall apart and to require separate treatment. On the one hand, we may inquire into the relation of minds, as knowing, feeling, and willing, to the material world, as something which they know and are interested in, and which affords a field for their action and a medium of communication between them. We may refer to this as the subject-object relation. From this point of view what is correlated with the individual mind, as the object which it minds, is the material world in general, stretching out indefinitely beyond the limits of our own bodies into the immensity of space, and of past and future time. From the other point of view we take account of its connexion with what is comparatively only a vanishingly small part of this vast whole. We consider only its peculiar relation to certain occurrences in the living bodies of men and animals. This is the psycho-physical problem of the relation of body and mind. Both lines of inquiry, if resolutely followed up, bring us face to face with issues fundamentally the same and of fundamental importance, theoretical and practical, for our whole view of the universe and of man's place in it. The way of approaching such questions through the problem of body and mind is, in some ways, the more superficial. But it is the easier to start with; and I shall therefore consider it first, taking account of the subject-object relation only in so far as it may turn out to be directly relevant to the psycho-physical.

My aim in the present chapter is to determine wherein the psycho-physical problem consists. As ordinarily formulated the question at issue seems *primâ facie* to be purely scientific and not distinctively philosophical at all. It is supposed to be concerned only with the factual relation of two series of events or 'phenomena', one called mental and the other neural. Do these processes simply go on together and vary concomitantly? Or do they mutually determine each other? Or, again, is one of them entirely dependent on the other? So stated the problem does not seem to differ in principle from that, say, of the correlation of heat and volume. It is true, indeed, that mental occurrences are fundamentally unlike neural occurrences, and that from the standpoint of physical science there is no such fundamental unlikeness between diverse material processes. But the unlikeness does not preclude a scientific account of the connexion of the two sets of heterogeneous occurrences. For, in spite of their disparity, it is in principle possible to discover more or less regular correlations between them in the way of sequence, simultaneity and co-variance.

But the properly scientific problem also brings us face to face with further questions which, falling outside the province of science, require some sort of answer, positive or sceptical, from philosophy.

The disparity of bodily and mental events, though it does not altogether preclude scientific advance, limits it very seriously in principle, and makes it essentially superficial as compared with the actual and possible achievements of the physical sciences within their own domain. Physical science in general, being founded on manifold relatively independent data, supplied by observation and experiment, has a corresponding multiplicity of relatively independent starting points, each raising distinct questions. Yet these different questions cannot, in the long run, be fully answered apart from each other. Each, when followed up, finds its answer only in the answers to others; and the answer to each again raises other questions which require to be dealt with in like manner. It is important to add that the propositions of physical science are always more or less hypothetical and that the degree of their probability depends on the degree of precision with which they answer a more or less wide range of more or less diverse questions arising from more or less diverse and relatively independent empirical data. Thus the several physical problems are ultimately parts of one problem, and the several physical sciences are ultimately parts of the one science which seeks to disclose a single comprehensive 'order of nature' connecting with each other the phenomena of the material world. In this way, physics and chemistry gradually develop towards the ideal of a single continuous system within which special processes and laws are explained as only special cases of more general laws and processes. They are concerned with determinants of certain ultimate determinables, such as motion, mass and energy, and these determinables are themselves correlated and mutually complementary as essential aspects of the material world in general.

The matter of which living organisms are composed is ultimately the same as that found in inanimate bodies; and the occurrences which take place in it are, so far as science can ascertain, physico-chemical occurrences. There is, however, a very important difference. Distinctively vital processes take place within a peculiar system of conditions very dissimilar from anything discoverable in matter which is not alive. The physico-chemical events are correlated with each other and mutually dependent in an order which suggests a tendency towards the fulfilment of ends, and is therefore naturally called 'teleological'. At this point we encounter the question at issue in biology between the vitalist and mechanical views. So far as this question really concerns the nature of things and is not merely one of method, it may be stated as follows. Are the special laws distinctive of vital process merely special applications of more general laws which hold also for the inorganic world? Within the inorganic world the same system of ultimate laws may yield very different results as the conditions of their application vary. Thus the law of gravitation contributes to explain such different facts as the fall of bodies on the earth, the tides, the orbits of the planets, the rise of water in the common pump, etc. According to the mechanical view in biology, the peculiar set of conditions distinctive of vital process is only an extreme and immensely complex instance of such variations, involving no ultimate laws and no ultimate factors which are not common both to animate and inanimate matter. Hence, for the mechanist, it is at least a permissible hypothesis that life may have developed according to general physical and chemical laws from a previous state of things in which there were no living bodies.

The vitalist, on the contrary, holds that, for those parts of the material world which are alive, laws are operative which in spite of their special and limited application are none the less ultimate and not derivative. They are held to be ultimate not merely in the sense that it is practically hopeless, owing to the complexity of the conditions, to show in detail how they can be derived from more universal principles; but also in the sense that by their own intrinsic nature they are essentially incapable of being so derived. Thus, if the vitalist is justified, there is, at this point, a real breach of continuity in that order of nature which physical science seeks to discover. Its advance in this direction is barred, not merely by the complexity of the problem, but in principle. Which of the two parties is right we need not here consider. What does require to be emphasised is that, in any case, the psycho-physical problem is on an entirely different footing. Vital processes, however peculiar in their nature, and however peculiar the pattern in which they are united with each other, are at least physico-chemical: they are, so far, of a piece with material process in general. Hence it is at least an intelligible question, whether they can, in principle, be accounted for by the same ultimate laws operating under different conditions. But when we turn to the psycho-physical problem such a question not only cannot be answered but cannot be intelligibly asked. The reason is that psychical occurrences, as involving consciousness or at least *experience*, are in their universal nature essentially disparate from merely material process, whether this takes place in living or non-living bodies.[1]

If we confine ourselves strictly to the point of view of physical science, there is an abstract dualism of matter and mind constituting an unmediated breach in the unity and continuity of the universe. Mental facts unaccountably superadd themselves as foreign and irrelevant occurrences to what is otherwise the one systematic order of nature as expressed in such terms as mass, motion and energy, and, in general, of spatio-temporal process. Properly philosophical problems arise when we consider whether this dualism, which for science is ultimate, can be intelligibly accepted as final without further inquiry. As I have already urged, physical science is one partial development among others of what I have called the Common Sense of mankind. It is therefore a baseless prejudice to assume that the last word lies with it, except in questions which properly fall within its own province. It may raise problems which it cannot solve, though, if we take account of what it ignores, they may prove not wholly intractable.

As regards the special question of the relation of mind and body, the outlook of science is essentially limited in two ways, (1) in its conception of the body, (2) in its conception of the mind. When we come to treat of the subject-object relation, we shall have to deal fully with the data that escape us from the purely scientific standpoint. At present, I shall refer to them only so far as may be needful in order to show why the student of physical science as such cannot help ignoring them.

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[1] I am of course speaking from the scientific point of view which excludes the animistic view of nature.

2. *The Scientific View of the Body*

Each of us has experience of his own body in a way essentially different from the way in which any one else can have experience of it. This is especially obvious in organic sensations such as thirst, hunger, fatigue, sexual excitement, and, in general, the bodily excitement inseparable from emotion; also in motor sensations such as are involved in the actions of looking, listening, handling, lifting a weight, eating, walking, strenuous thinking. For each of us his body as thus privately experienced forms an integral part of what he means by himself when he uses the word 'I', and says for instance: 'I am or feel hungry'; 'I am in love'; 'I think hard'; 'I lift a weight'. It is not however as merely bodily occurrences that such bodily states and processes are apprehended as entering into the being of the self. They are included in self-consciousness only inasmuch as they are experienced as one with the experiencing individual. But an experiencing individual as such is a mind. What we know or seem to know in ordinary self-consciousness is therefore a concrete whole within which mind and body are only abstractly distinguishable as partial factors. It is, however, the mental factor which gives the whole the character of being a self or 'I'. Hence the unity of mind and body as apprehended in ordinary experience may properly be called the unity of the embodied self.[1]

This experience of the self as embodied ought either to be shown to be illusory, or to be taken as a fundamental datum in any attempt to determine the relation of body and mind. But in approaching the psycho-physical problem from the standpoint of physical science it is ignored, or tacitly supposed to be superseded by more adequate and accurate knowledge. The aim of the student of science is to trace the universal order of nature as a system of most general laws; and whatever does not contribute to this end is for his purpose irrelevant. Hence he regards living bodies of men and animals in the same way as he regards other parts of the physical world. The knowledge of them which is useful to him is in principle of the same sort as he has, for instance, of the chemical composition of water. It must be publicly and not merely privately accessible. Hence the peculiar experience which each of us has of his own body is necessarily left out of account. The data on which he relies are furnished only by external observation. Even as regards his own body he does not occupy the inner standpoint peculiar to the experiencing individual whose body it is, but rather that of the external spectator. It is therefore entirely indifferent to him whether or not the subject of a mental process in passing through it is in any manner cognisant of the occurrences which he assigns as its physical correlate. On the contrary, these occurrences, as known to him, neither do nor can enter into the experience of the experiencing individual. In seeing a tree I do not see a process in my own brain and I need not even think of such a process. It is not even necessary for me to know that I have a brain at all. Brain event and mental event cannot be observed together, and they are thought of together only when we are interested in the psycho-physical problem.

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[1] This view is fully expounded and defended in chap. viii of this Book and in Book IV.

3. *The Scientific View of Mind*

The inevitable tendency of physical science is to assimilate mental occurrences to physical. This is possible while fully recognising that they are fundamentally disparate in their intrinsic nature. What physical science is concerned with is the spatio-temporal relations of physical occurrences to each other. But mental events, though they are not spatial, are none the less events, and as such are related to each other and to physical events in the way of succession and simultaneity. It is in this light and only in this light that the physiologist or biologist can consider them. The scientific point of view is marked by the application to both physical and mental facts of the common term 'phenomenon'. The distinction between them is regarded as a distinction between two sets of phenomena.

Such a view is utterly inadequate, and if it is taken to be adequate is profoundly misleading. It leads to a false opposition of matter and mind as mutually exclusive. If mental facts are simply another set of phenomena superadded to the physical, the fundamental disparity between them implies that they cannot in any way overlap or interpenetrate. It implies that nothing which is physical can also be mental and that nothing which is mental can also be physical.

Now it is true, and immensely important, that experience or 'consciousness', abstractly considered, is exclusively opposed to extension, figure, motion, etc. It is also true that what is essentially distinctive of mind is experience, so that there is nothing mental where nothing is experienced or experienceable. But if we take the term mental as simply synonymous with experiencing or being conscious, we are arbitrarily narrowing its meaning in a way which is quite inconsistent with its application in ordinary usage and in psychology. The reason is that we are trying to conceive mind in abstract isolation from what it minds, and mental processes as purely subjective, in abstract isolation from their correlative objects. That physical things enter into my experience inasmuch as I am in any way cognisant of them, interested in them, and actively occupied about them, is not itself a physical fact, and there is a whole system of propositions truly predicable of them in this aspect of their being which do not express their physical nature or relations. According to the established meaning of 'mental' in psychology and in ordinary usage such propositions assert mental facts. The term mental thus covers not only what is predicable of an experiencing individual and is therefore in the proper sense subjective—e.g. attention, desire, hope, fear; it also covers what is predicable of objects inasmuch as they are objects for an experiencing individual. I attend to a picture and it recalls to me a friend who gave it to me, or a landscape which it resembles. Inasmuch as it is I who attend, my attention is not merely mental but in the strictest sense subjective. On the contrary, it is the picture as an object attended to which puts me in mind of my friend; it does so because it has been associated with my friend in the course of my past experience. The propositions that the picture is associated with my friend and that it recalls him are sharply contrasted with such propositions as 'the picture hangs on the wall', or 'is a water-colour' or 'has a wooden frame'. It really has a wooden frame whether anyone perceives or thinks of it or not. But association and recall are predicable of it only inasmuch as some one is or may be cognisant of it and interested in it. These are therefore legitimately called mental facts.

Such words as 'idea', 'percept', 'concept', etc. serve to indicate that we are considering objects in this aspect of their being, i.e. as my objects or yours. We may here, in order to avoid such technical terms as 'presentation', follow Locke in using 'idea' as the most general term of which 'percept', 'concept', 'notion', etc. are special cases. What then is an idea, and in what sense do we say that my idea of the picture suggests to me the idea of my friend? There is only one answer which does not lead to hopeless difficulties. My idea of the picture is the picture itself[1] as it appears to me more or less adequately, correctly or incorrectly, in this or that stage or phase of my life-history. It is the picture itself, inasmuch as the picture while remaining a physical object is also my idea.

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[1] Or, in exceptional cases, something which I mistake for a picture.

Now when the man of science in dealing with the psycho-physical problem speaks of the mental occurrences or phenomena correlated with bodily process, his application of the term 'mental' certainly is not, and is not meant to be, more narrow than its application in psychology and in ordinary language. He is bound to refer to the mental side whatever does not belong to the body as part of the general order of physical phenomena. Hence for him, as for the psychologist, ideas, including percepts, are mental facts. But from his standpoint mental facts are simply another set of phenomena superadded to the physical without overlapping or interpenetration. Hence ideas are for him mere 'states of consciousness' which may more or less correctly represent a physical world inasmuch as they resemble or correspond to it, but are in their own nature and existence quite separate from it. Sensations also, including experienced sensa as well as the experiencing of them, because they plainly fall outside the physical order, are regarded in the same way as merely mental.

If this were true, it would follow inevitably that we cannot know the physical world at all as physical science begins by conceiving it. All that we can be cognisant of would consist in representations falling within our private existence and having no being independent of it. Our own ideas would intervene, like a painted screen, between us and the physical world, if indeed there is a physical world at all. There would be no way of ascertaining that the supposed representations really are representations of something beyond themselves. Still less would it be possible to get outside the inner circle of our ideas and 'states of consciousness' so as to determine how far they conform or fail to conform to the outer circle of real or 'objective' being. We should not even be able to make a mistake about physical facts. To make a mistake is to believe something real to be in some way different from what it really is. But unless we are cognisant of the real being concerning which the mistake is made, we cannot believe it to be what it is not; we cannot apprehend it wrongly if we cannot apprehend it at all.

Thus the student of physical science, if he abides by his own standpoint exclusively and consistently, cuts the ground from under his own feet. He destroys the theoretical possibility of physical science itself.

4. *Our Plan of Procedure*

It is a fundamental fallacy to treat the scientific way of approaching the relation of body and mind as philosophically adequate. But it would be an error almost equally grave to neglect it. It supplies a whole system of relevant facts which we cannot afford to pass by as if they were irrelevant. In order to see how they bear on the philosophical problem, we shall start provisionally with the purely scientific line of inquiry, setting aside its glaring failure to yield any tenable account of the subject-object relation and its consequent bankruptcy considered as a theory of knowledge. We shall then see that even if we confine ourselves within these limits the scientific mode of procedure raises questions which are not properly scientific but metaphysical; it also raises them in such a form as to indicate in a vague and general way the sort of metaphysical assumptions which must be made in order to answer them. This is the ground to be covered in Book II. In Books III and IV we turn expressly to the subject-object relation, and reach results which support, explain and define those of Book II, and harmonise with the Common Sense of mankind as considered in Book I.

Chapter II

INTERACTIONISM, PARALLELISM, AND MATERIALISM

1. *Considered as Scientific Theories*

It is the distinctive function of physical science to discover the order in which physical events take place according to a system of most general laws. It is for philosophy to consider whether the factors which science takes account of in fulfilling this task do or do not constitute all that really is. Now the living bodies of men and animals form part of the physical world and have to be included in the general order of nature which science investigates. But at this point a new problem arises. How are the mental occurrences which enter into the life-history of men and animals as experiencing individuals related to the physical order? Here too the question so far as it is properly scientific concerns the order of events and not the full nature of the concrete reality.

From this point of view there are three main alternatives: (1) That antecedent events which are purely mental contribute to determine the course of bodily and, most directly, of nervous process, so that this is different from what it would be if only physical conditions were operative; and inversely that antecedent events which are purely physical (neural) in like manner determine the course of mental process. This is the theory of Interactionism. It presupposes the mutually independent existence of mind and matter. (2) This is also presupposed in Parallelism when it is strictly conceived, and not confused with Materialism. According to the Parallelist, mental process and nervous process go on together and vary concomitantly. But they do not interact and neither is dependent on the other for its existence. In the phenomenal order, both mind and matter are taken as ultimate. (3) The Materialist, on the contrary, denies the independent existence of mind. He insists that mental processes regularly occur when and only when certain complex physical processes take place in living organisms. They begin, continue, cease and vary in their nature with the beginning, continuance, discontinuance and variation of the physical processes. These on the contrary are fully accounted for by physical antecedents, by the previous and simultaneous course of events in the physical world as traceable by the methods of science. Hence the materialist, taking the scientific point of view as ultimate and adequate, is bound to affirm that in some way matter produces mind.

2. *Considered as Metaphysical Theories*

Each of these scientific theories becomes metaphysical when it is taken to express the whole truth—when, in other words, the conditions which suffice to determine the order of events according to rules of sequence and coexistence are assumed to be the only conditions which really exist and are really operative. Interactionism becomes metaphysical if it is assumed that mere interaction of itself absolutely constitutes the sole essential connexion between bodily and mental process. Parallelism becomes metaphysical when the same assumption is made for the factual concomitance and co-variation of mental occurrences and certain neural occurrences. Materialism becomes metaphysical if it is taken for granted that certain physical processes in living organisms are not only uniformly followed or accompanied by the existence of mind, but absolutely and of themselves produce or generate it. The man of science, while admitting that there may be other indispensable factors than those which come within the ken of science, may avoid committing himself to any positive metaphysics, by denying that there is any possible way of knowing what they are. But even so he is still taking up a philosophical position, that of Agnosticism or Scepticism.

3. *The Attitude of Common Sense*

When hardened into metaphysical doctrines none of these alternative views, as will appear in the sequel, can be regarded as consistent with Common Sense. On the other hand, if they are considered merely as scientific hypotheses, Common Sense is not irreconcilably opposed to any of them.

This is frequently denied. It is often asserted that the action of mere body on mere mind and of mere mind on mere body is *primâ facie* a part of ordinary experience. It is regarded as *primâ facie* a fact of ordinary experience that the body acts on the mind in sensation and the mind on the body in volition. Is this so, if we mean by body mere body and by mind mere mind? Let us first consider sensation. 'If someone sticks a pin into me and I feel a painful sensation, it seems obvious', says Mr C. D. Broad,[1] 'that the entry of the pin into my body is the cause of the sensation in my mind.' In this statement there is a two-fold equivocation. The term 'mind' is ambiguous, and so is the term 'cause'. When I am aware of myself as feeling the painful sensation the self of which I am aware is not pure mind but the union of mind and body in the embodied self. It is therefore not obvious that the sensation is an effect produced merely in the mind. I do not, however, here insist on this point, as it is foreign to the scientific outlook. The standpoint of science being that of the external spectator, the body as present to the primary self-consciousness of the experiencing individual is for it included under the vague phrase 'mental phenomena'. There remains the ambiguity of the term 'cause'. Certainly in ordinary language the entry of the pin into the body would be called the cause of the painful sensation. But this does not mean that it is the sole condition in the phenomenal order which is required to secure the occurrence of the sensation. The meaning is rather that, other conditions being taken for granted, as they usually may, the entry of the pin makes the difference between the occurrence or non-occurrence of the event of which it is therefore said to be the cause. Common Sense is quite prepared to learn without surprise that a multitude of other conditions and of intermediate processes is required in order to secure the occurrence of the sensation. Further, it is quite prepared to learn that it has a very inadequate view of the event which it calls the entry of the pin. This may include much that is hidden from it and inaccessible to it. The deficiencies of prescientific knowledge of the conditions of sensation have been, partly at least, supplied by science. It has been shown that the entry of the pin, if it is to give rise to sensation, includes action on a special sense-organ, and that the change in the sense-organ must be followed by a successive series of complex transactions within the body leading up to a certain brain-event. It is only when this brain-event occurs that the sensation occurs.

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[1] *The Monist*, April 1918, p. 234. Cf. *The Mind and its Place in Nature*, p. 96.

Now the issue between the theories of interaction, parallelism and materialism concerns only the relation between this brain-event and the sensation. But the Common-Sense belief is simply irrelevant to this question, which it never raises at all. It is compatible with all three views. According to the advocates of interaction, the cerebral occurrence causally conditions the sensation by acting on something called a mind. Hence the pinprick which initiates the train of occurrences terminating in the brain-event is only a remote causal condition of the sensation. According to the materialist, the brain-event by itself causes the sensation without acting on anything else. Here too the pinprick which conditions the brain-event conditions the resulting sensation. According to the parallelist the brain-event does not cause the sensation either by itself or by acting on a mind. Sensation and brain-event are so connected that neither can exist without the simultaneous existence of the other. Thus the pinprick is a causal condition of the sensation, and, at the same time, of the brain-event, which cannot exist without it. Thus parallelism in no way contradicts the Common-Sense belief that the entry of a pin into my body, under ordinary circumstances, causes a painful experience. It merely adds that, in doing so, it must coincidently affect my brain in a certain way.

Similarly, parallelism in no way contradicts the Common-Sense belief that my volition to move my arm is causally connected with the ensuing movement. The disagreement with the advocates of interaction concerns only the way in which the volition acts. On neither view can the volition be regarded as by itself the complete cause of the train of events within the body, which leads up to the movement. Both are bound to admit that the existing state of the brain at the time when the mental event is occurring plays a very important part. But at this point they diverge. The interactionist asserts that the volition by itself, as a purely mental event, acts on the brain so as to produce a change in it, which, so far as it is due to the will, is not causally dependent on any material antecedents, but purely on this mental antecedent. The parallelist asserts that the mental event is so connected with a concomitant brain-process that both act together; they act together in such a way, that, from the ordinary point of view of empirical science, it is impossible to refer part of the effect to the one and part to the other. Neither acts on the other or produces the other. But both are so connected that neither can exist without the other, and neither can vary in any manner or degree independently of the other. Hence any variation in the effect traceable to a variation in the mental occurrence is also traceable to a corresponding variation in the brain-occurrence, and inversely.

Materialism is rarely put forward as a purely scientific view. It is nearly always, consciously or unconsciously, transformed into a metaphysical speculation. But if we strictly confine it within the limits of science, there is, so far as regards the present issue, no essential difference between it and parallelism. There is indeed a difference which is important for philosophy as well as for science. This difference, however, does not concern the facts but only the proper way of describing them. The materialist says that mind is entirely a product of matter. The parallelist objects that such language involves a use of the word *production*, otherwise foreign to science. Interaction being excluded, there is no question of material occurrence producing an effect in something else which is not material. The only other scientific sense in which the term *produce* can be employed with a definite and distinctive import is that in which, e.g. oxygen and hydrogen combine to produce water. Here the product is an outcome of the conditions which produced it. It is these conditions themselves redistributed and modified by their interaction with each other. In this sense a preceding state of the brain may and does contribute to produce a succeeding state. But the brain-process does not in this way produce the mental process which accompanies it and varies concomitantly with it. The materialist ignores this distinction or treats it as unimportant. What is important for him is that in the phenomenal order, mental process begins, continues, changes and ceases only with the beginning, continuance, change and cessation of certain special processes in the physical world, which are themselves phenomenally traceable only to physical conditions. The parallelist does not deny this. On the contrary, it is the last word of science for him as well as for the scientific materialist. Neither of them is bound to take the last word of science as absolutely the last word. If the scientific materialist is content to regard the scientific view as a relatively incomplete and superficial account of what really exists and takes place, he need have no quarrel with the position of Common Sense that we determine the course of events in the physical world by our voluntary initiative. This belief may be and presumably is adequately grounded in an experience which physical science ignores.

None the less, it must be admitted that it is very difficult to keep materialism within these limits. Why insist that mind does not merely accompany certain physical conditions but is produced by them unless 'produce' is used in a metaphysical sense? As a matter of fact those who have called themselves materialists have in general maintained as ultimate truth that mind is absolutely created by merely material conditions.

Metaphysical materialism is incompatible with any action of body on mind or of mind on body. The only causal relation which it recognises is the production or 'generation' of mind, and of whatever is mental, by merely bodily factors. But *A* in producing *B* cannot act on or be acted on by *B*. *B*, in order to act or be acted on, must first exist; but it does not exist until it is called into existence by *A*. Oxygen and hydrogen in combining to produce water do not and cannot act on the very water they themselves produce. For until it is produced the water is not there to be acted on. Pure materialism therefore plainly contradicts the belief that my volition to move my arm causally conditions the voluntary movement. The brain-event which generates the volition is also the sole cause of what follows in my body.

The materialist may say that though primarily mind and mental occurrences are produced by purely bodily conditions, yet when they have once come into being they may interact with the body. It is thus possible for a volition causally to condition a bodily movement. But this kind of causality, even if it is possible, is incompatible with the Common-Sense belief. It is as incompatible with Common Sense to regard the agency of mind as merely that of a tool or instrument of something non-mental, as it is to deny it altogether. *A fortiori*, it is incompatible with Common Sense to regard the mental agency as merely a continuation of the agency of matter. Yet on the materialist hypothesis this must be so. For according to it, the whole being of the volition, like that of other mental occurrences, is created out of nothing by bodily processes.

Its agency must therefore be wholly and absolutely dependent on the material conditions which give it being. It can have no agency which is not merely a further development of this agency.

4. *Interaction and Parallelism are not genuine Alternatives to Materialism*

Taken merely as scientific accounts of the connexion of nervous process and mental process, both interactionism and parallelism fail signally to cover the empirical facts on which the materialist relies. If mind and matter are to interact they must both pre-exist. Neither can act or be acted on before they exist. Now there is a very large and impressive group of facts which seem to show that mental occurrences only come into being, and only continue in being, in dependence on material conditions. They seem not merely to be modified by material processes, but, in the phenomenal order, to owe their very existence to them. The broad facts are familiar and obvious in ordinary experience, though we are too often tempted to ignore them instead of fairly facing them. Conscious life in men and animals appears to begin only with the birth and growth of their bodies. When the body dies, it seems to cease altogether. It is suspended for a time under the influence of chloroform or in consequence of a blow on the head. In the successive stages of drunkenness, mental processes gradually diminish in intensity and complexity, until at length complete torpor is reached. Science adds a vast body of evidence pointing in the same direction. I need only refer in general to the facts of mental pathology, e.g. to what happens when the secretion of the thyroid gland is defective.

If we consider such facts in their whole range and variety, it must be admitted that they lend very strong support to scientific materialism. Indeed, they would almost compel us to accept it, as a philosophical theory, if there were not very cogent reasons against it. There seems to be no evidence of the existence of mind or of anything mental until certain special events take place in certain special parts of living organisms. When these events occur, mind begins: when they cease for a time or permanently, mind appears to cease for a time or permanently; and the varying nature of the minds which arise seems, so far as our knowledge extends, to be determined by the varying nature of the material conditions, e.g. by heredity and biological variation. Further, it is not only mind in general, but all the various processes and factors included in mental life which depend for their existence, severally and in detail, on nervous processes. They are abolished when their material conditions cease, begin when these begin, and continue only when these continue. At least this holds good so far as our evidence extends; and the evidence is wide enough and varied enough to justify a strong presumption that it holds good generally.

It is plain that the ordinary theory of interaction between body and mind cannot cover this class of facts, without further far-reaching assumptions. It simply presupposes minds as already existing, and does not consider at all the conditions of their origin, continuance, and cessation. It offers no alternative to materialism, and yet materialism, if accepted, would be fatal to its claims even as an account of what takes place when an experiencing individual is already in being.

All the ordinary arguments for interaction lose their force if we begin by accepting materialism. If a sensation is created by material processes, then whatever modifies these processes will modify the sensation or cause it to cease altogether. It is quite superfluous to assume direct action of the material occurrences on sentience. Similarly, the argument from the Common-Sense belief in voluntary agency can no longer be urged. This belief must be illusory if the will itself is absolutely dependent on material conditions, so that its action is merely that of the material conditions acting through it as an intermediate stage. It is futile to urge the absurdities which follow from the view that intelligent purpose and human interests in general do not count at all as factors working in the direction of their own fulfilment. For, according to the materialist, both intelligent purpose and its fulfilment are ultimately the outcome of material occurrences working blindly. To suppose that the material occurrences are capable of producing felt wants and desires, but are incapable of working towards their fulfilment, is to strain at a gnat and swallow a camel.

Interaction, then, offers no real alternative to materialism. Does it fare any better with parallelism? It certainly does not, if the theory is regarded merely as an account of the relation of mind and body, without further assumptions. So limited, all that the parallelist asserts is that mental occurrences are inseparably associated with certain bodily processes and vary concomitantly with them, but without interaction, or any kind of causal dependence. In denying interaction he is at one with the materialist. But if he is not himself, as he often is, a materialist in disguise, he refuses to admit that the organic processes produce the mental processes with which they are connected. In this, however, he seems to be doing violence to the facts which he himself admits. He admits that conscious life arises only when certain material events occur, ceases when these cease, and throughout its course varies concomitantly with them. He cannot, without absurdity, say that at a certain stage in the course of nature conscious life spontaneously begins to be, and spontaneously associates itself with a certain series of material processes, e.g. in the brain of man. Yet what else can he say if he does not acknowledge that the material processes produce the mental?

If he cannot bring himself to admit this, he must plainly make further assumptions. He may hold that both matter and mind have their source in something that is neither, but is in its own nature unknowable. This is the so-called double-aspect theory; according to it mind and matter are different sides or aspects of the same thing. We may dismiss it as untenable for the following reason. It is put forward and can claim acceptance only on the assumption that there are cogent grounds for rejecting the alternative view of the materialist. Now, as I shall attempt to show in the sequel, there really are such grounds. But when we come to examine what they are, we shall find that so far as they are valid at all, they forbid us quite generally to regard mind as arising from anything which is not mind. It makes no difference whether this is supposed to be material or immaterial, or whether it is supposed to be knowable or unknowable. There is ultimately no ground for denying that matter can produce mind, which is not equally a ground for denying that anything whatever which is totally unconscious can produce what is conscious in the widest sense of the word 'conscious'. The difficulty lies in the supposed emergence of anything akin to sentience, feeling, thought or experience, from what is totally devoid of any kind or degree of sentience, feeling, thought or experience. Thus, so far as regards our present problem, material existence may be regarded as synonymous with non-mental existence, and non-mental existence as synonymous with unconscious existence. Thus, if materialism is rejected, the beginning of mind must always be referred to pre-existing mind. Now, the philosophical parallelist, when his parallelism is not merely a disguised materialism, sees this quite clearly. Hence, if he is to be consistent, he must take a bold step and assume that material and mental occurrences are somehow correlated with each other, not only in men and animals, but everywhere throughout the universe. This step seems logically almost inevitable, if on the one hand we reject materialism, and if on the other we insist on facing the problem which materialism raises.

Chapter III

PARALLELISM *VERSUS* INTERACTIONISM

1. *The Question at Issue*

The disagreement between metaphysical parallelism and interactionism is by no means so fundamentally important as their disagreement with the common enemy, materialism. Comparatively speaking, their opposition to each other is a domestic quarrel. It will be most convenient for us to deal first with this narrower question. Materialism being excluded, which of the other alternatives is preferable? And is either ultimately tenable as a metaphysical theory? We may here confine ourselves to the body-mind problem, setting aside universal parallelism and universal interactionism. For these are only a transference to the universe in general of a relation supposed in the first instance to subsist between mental process and certain occurrences in living organisms. Neither doctrine can be legitimately extended in this way unless it can first justify itself in the narrower application. The question is whether mental process immediately acts on relevant nervous process and inversely, or whether they simply go on together and vary concomitantly without causal connexion.

The problem is, in the first instance, scientific; we pass to metaphysics only when, denying or ignoring the limitation of the scientific standpoint, we treat either view as complete and final truth.

The parallelist asserts a relation of mind and body which has no real analogy in the general order of nature as known to science. Hence, though neither view need be fundamentally incompatible with Common Sense, yet the hypothesis of interaction is *primâ facie* the more natural and obvious, and the *onus probandi* lies on those who reject it. Indeed, the only way in which the parallelist can support his own position is by showing that interaction is untenable and that the only tenable alternative is that which he offers.

Whichever view we may prefer for purely scientific reasons, the question still remains whether it is philosophically adequate. Can mere interaction on the one hand, or mere concomitance and co-variation on the other, constitute the whole connexion between mind and body?

2. *How it is to be decided*

From the purely scientific standpoint, it would seem that a decision ought to be possible by an appeal to empirical evidence, to observation and experiment. If mind and brain interact, why cannot we discover interaction between them in the same way as we discover that different parts of the nervous system interact with each other? As a matter of fact, there is no relevant empirical evidence accessible to the physiologist and physicist. And this of itself is used as an argument against interaction. If nervous process and correlated mental process do act on each other, we should expect to find changes in the course of bodily events not traceable to physical conditions either within or without the organism. No such changes being discernible, it is inferred that they do not exist. This argument, which is examined in Section 3, proceeds on the assumption that wherever there is interaction, science requires the fulfilment of certain general conditions, such as the transference of energy. The contention is that these conditions are not fulfilled in the relation of physical and mental phenomena, and that therefore there is no interaction between what is physical and what is mental.

Scientific interactionism becomes metaphysical when it claims, overtly or covertly, to be the ultimate solution of the psycho-physical problem. As a metaphysical doctrine, therefore, it must mean not only that there is direct interaction of bodily and mental phenomena, but that this interaction by itself constitutes the only direct connexion between them. It may be urged against this view, and, as I hold, cogently urged, that it is incompatible with the very conception of interaction and of causal process in general. But it does not follow that we ought to accept mere parallelism. For it is just as difficult to hold that the sole direct connexion is mere concomitance and co-variation. In both cases a more ultimate connexion is presupposed. These metaphysical questions are dealt with in Section 4.

3. *The Scientific Argument from the Absence of Empirical Evidence*

The general principle of the argument is that if there are changes in the body due to the immediate action of an immaterial agent, we ought to be able to detect these changes, and that in fact we cannot discover their presence. One side of the position of the opponent of interaction is here unassailable. We have not so far discovered any bodily process which may not, so far as we know, have followed from purely material conditions. In the present state of our knowledge we have no positive evidence that purely mental agency ever strikes in upon the flow of bodily processes so as to give it a turn which it would not otherwise take. There are no ascertained empirical facts incompatible with parallelism.

But the other premise of the argument is more doubtful. The parallelist has not entirely succeeded in showing that if facts incompatible with parallelism existed, we should, with our available data and methods, be certain of detecting their presence. Indeed, he does not even attempt to show this, except in one special argument based on the law of the conservation of energy. In the current statement there is often much confusion about the point at issue. It is often taken for granted that the law of conservation directly excludes the possibility of mind acting on matter. But this is quite a baseless assumption and virtually leads to a *petitio principii*. In the law of conservation the possible intervention of an immaterial factor is not taken into account at all. All that it commits us to is that if and so far as material events are due to material conditions, gain or loss of energy in one direction is always balanced by equivalent loss or gain in another direction. Nothing is asserted of what may or may not happen if and so far as conditions come into play which are not material.

The argument against mental agency, if it is to have any force at all, must be empirical and must be stated as follows: 'Mind cannot act on body without giving rise, in the body, to a gain or loss of energy, which is not balanced by any equivalent loss or gain. But no gain or loss of bodily energy is discoverable which is not balanced by an equivalent loss or gain. Therefore mind cannot act on body at all.' Now there is fairly good evidence for the minor premise in this syllogism. It has been shown by carefully conducted experiments that, on an average, over a long space of time, the total amount of energy given out by the body, in heat and movement, balances that received by the food eaten and the air breathed.[1] There seems to be no likely way of reconciling this result with the view that the mind's action increases or diminishes the total amount of energy in the body. There is no mode of reconciliation which would seem likely to anyone who does not start with the preconception that they must be reconciled at all costs.

The minor premise may then be regarded as at least extremely probable. But the major is open to question. The action of mind on body need not necessarily involve any loss or gain of bodily energy. 'There are cases where it is not true even of purely physical transactions; and even if it were always true in the physical realm it would not follow that it must also be true of trans-physical causation. Take the case of a weight swinging at the end of a string hung from a fixed point. The total energy of the weight is the same at all positions in its course. It is thus a conservative system. But at every moment the direction and velocity of the weight's motion are different, and the proportion between its kinetic and its potential energy is constantly changing. These changes are caused by the pull of the string, which acts in a different direction at each different moment.'[1]

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[1] Cf. Broad, *The Mind and its Place in Nature*, p. 105.

'Why', asks Mr Broad, 'should not the mind act on the body in this way?' I am not prepared to give any *a priori* reason why it should not so have acted. But I have the greatest difficulty in making the hypothesis cover the relevant facts. What ought to correspond to the varying pull of the string is not only the varying direction but the varying intensity, duration, rapidity and complexity of the whole conative process. But the conative process requires for its existence and development a supply of nervous energy proportioned to its intensity, duration, rapidity and complexity. Much energy may be used in this way, whereas the ensuing movement, e.g. signing a document, may require very little. When my body is enfeebled by fatigue, ill-health, or want of food I become incapable of the sustained and strenuous effort of making a momentous and difficult choice. If I start in full bodily vigour, the struggle of making up my mind may leave me so exhausted as to be no longer capable of hard mental exertion. Now where does the energy used in the mental process come from and where does it go to? Is the mental energy identical with nervous energy? Or are the two distinct but parallel and co-variant? To adopt either of these alternatives is, so far, to reject interaction. On the other hand, if interaction is to be maintained, how is this possible without some interchange of energy between mind and matter? Mr Broad may be able to find a way out of such difficulties; but only, I think, by making special and far-fetched assumptions which find little or no support in physical analogies. Even so, the utmost that his and similar arguments can show is that it is not impossible for merely mental occurrences to produce change in the material world. They do not supply any reason whatever for asserting that this is so. No one would attach importance to them who did not think that he had independent grounds for maintaining interactionism at all costs.

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[1] *The Mind and its Place in Nature*, p. 107.

Interactionism, instead of being, as it appears at first sight, the simplest hypothesis from the scientific point of view, turns out to be the most complex; the special assumptions which it involves, being otherwise unverifiable, lend it no support, but are rather a dead weight on it.

4. *The Metaphysical Question*

A properly metaphysical issue is raised when it is asserted on one side and denied on the other that interaction between body and mind is, from the nature of the case, impossible. Its intrinsic absurdity is generally maintained by the thoroughgoing parallelist. He asks, for instance, such questions as—How can the thought of a beefsteak alter the position or motion of molecules? He takes for granted that the question answers itself. It is for him evidently absurd that the thought of a beefsteak can do anything of the sort. If he is pressed to point out wherein the impossibility consists, he usually replies that it is due to the utterly heterogeneous nature of what is material and what is mental. He thus commits himself to the principle that some likeness of nature between interacting existences is an indispensable pre-requisite of their interaction. But to many competent students of science and philosophy this principle does not seem self-evident at all; and against these opponents the parallelist can do nothing but reaffirm his own view.

As I have already indicated, it is a mistake thus to rest the case against interaction merely on the disparity of nature of the material and the mental. The real question is whether two existences can interact unless they are comprehended within a spatio-temporal whole, or some other complex unity. Can there be interaction without communion? To me it seems evident that there cannot. If anyone doubts or denies that this is really evident, the only way in which I can attempt to convince him is by stating the question in such a way that it answers itself.[1]

Suppose two spheres of existence, *A* and *B*, which, if we set aside interaction, are otherwise entirely unconnected directly or indirectly. There is nothing between them and there is no part common to both and no common boundary. How, on this assumption, can they in any way communicate with each other? How can what takes place in *A* make any difference to what takes place in *B*, or inversely? If we suppose not one *B* but several—B^1, B^2, B^3, etc.—equally unconnected with *A*, there is no reason why what takes place in *A* should make a difference to what takes place in *B* rather than in B^1 or B^2, etc. Thus if there is no communion between mental and material process, there is no reason why what takes place in my brain should causally determine what takes place in my mind rather than what takes place in your mind or in any other mind. Inversely, there is no reason why what takes place in my mind should causally determine what takes place in my brain rather than in any other brain, or indeed in any other part of the physical world—for example, the motion of the planets, or chemical processes in Sirius. It may be said that the ground of interaction between *my* brain and *my* mind is the fact they are both *mine*. In itself this is a good answer. But it is logically precluded by the view we are now examining. For on this view the connexion between my mind and my body, in virtue of which they are both mine, consists entirely in their interaction. It cannot therefore be a precondition of their interaction. If we approach the psycho-physical problem from the standpoint of physical science, interaction is, from the nature of the case, untenable.

But parallelism is for the same reason equally indefensible, if it is taken to mean merely that nervous and mental process go on together and vary concomitantly. In the absence of communion there is no reason why they should do so; mere concomitance and co-variation cannot, any more than mere interaction, be regarded as by itself constituting the sole connexion between them. All that can be urged against the possibility of mere interaction can be urged with equal cogency against the possibility of mere concomitance. To meet this difficulty parallelists have formulated what is known as the double-aspect theory.[1] Mind and body are said to be two aspects or sides of the same thing. But what the thing is and what is positively meant by being an aspect of it are regarded as questions which cannot be answered, because they lead beyond the possible range of human knowledge. The theory thus has a positive and a negative or agnostic side. It is a step in the right direction inasmuch as it asserts that in some way or other there must be communion between matter and mind as parts or partial aspects of one whole. But it is precipitate and dogmatic in taking for granted that the nature of the communion is altogether unknowable. It is no doubt unknowable from the external point of view of physical science. But science is only a one-sided outgrowth of Common Sense. In primary self-consciousness, which science ignores, we are aware of the self not as mere mind but as mind and body in one.

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[1] See note at the end of this chapter.

5. *Conclusion*

Both parallelism and interactionism in their phenomenal form are indefensible. The parallelist goes astray in holding that, like parallel lines, mental and physical processes can never meet. But the advocate of interaction does not assail his opponent's position on this its weakest point. On the contrary, he makes the same assumption himself. What he asserts is that though mind and matter never meet they none the less can and do act on each other. If, on the other hand, we start from the unity of the embodied self as primarily known in self-consciousness, the ground common both to what we may call phenomenal parallelism and phenomenal interactionism is abandoned. The question therefore takes an entirely different shape. We have to ask whether the nature of the unity in which mind and matter meet is such as to admit of interaction. It seems to me that it is not. My reason is, not that they are too loosely, but, on the contrary, that they are too intimately connected. The action of the mind is not action of the mind only, but action of mind and body in one. It is the embodied self which is active and passive.[1] This view is strongly confirmed by, and strongly confirms, the scientific argument from the absence of empirical evidence of interaction between bodily and mental 'phenomena'. If we take parallelism to mean concomitance without communion we must reject it; if we take it to mean concomitance grounded in communion, there are strong reasons for accepting it. What is negatively implied in the metaphorical term 'parallel', is not that the processes said to be parallel do not meet, but only that they do not interact.

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[1] Cf. p. 83.

In treating the special topic of the present chapter, I have further enforced and developed two general principles which have already been expounded and defended in Book I. The first is the insufficiency of the scientific standpoint in philosophy. The other concerns causal process. So far as distinct existences causally determine or contribute to determine change in each other, such interaction must be grounded on the co-presence of the interacting factors within the unity of a whole, of such a nature that a certain change in one part of it cannot take place without change in other parts. In the ensuing discussion of materialism I shall extend this principle, applying it not only to the production of change in *B* by change in *A*, but to the production of *B* by *A*—especially to the supposed production of mind by merely material conditions.

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[1] I am here anticipating what I have to say at length in Book IV.

Note to page 90.

There is a prejudice against the appeal to self-evidence because it is supposed to imply a dogmatic claim to infallibility. It really implies nothing of the sort. In relying on self-evidence I may be deceived just as I may be deceived in relying on any other kind of evidence. I have to allow for the possibility that I may be committing some fallacy of inadvertence or confusion, so that what I take to be evident is really not so. I ought to admit the probable or practically certain presence of such a fallacy if sufficiently strong reasons can be adduced for believing that what seems to me to be absurd is none the less true. Still there is some room for doubt on which side the truth lies until I discover for myself or am shown by others the nature and source of my error. To the earth-flattener it seems evident, from the nature of the case, that if the earth is round, men at the antipodes must fall off into space. He may be met by arguments showing that the earth is in fact round, though men at the antipodes do not fall off. But so long as he cannot help finding this self-evidently absurd, he has a ground for doubting the validity of the counter-arguments and for exercising his ingenuity to show that they are not conclusive. He is satisfactorily refuted only when he is brought to see why he has gone astray in accepting as self-evident what is really not so. The bare fact that what seems self-evident to one person does not seem self-evident to another is far from disposing of the claim to self-evidence. It does indeed indicate a fallacy of confusion somewhere. But it does not determine where it lies. It may be difficult to attain a precise and unambiguous definition of the question at issue. Hence what is *primâ facie* obvious need not be self-evident, and what is self-evident need not be *primâ facie* obvious.

I may add that there can be no evidence without self-evidence. For no inference can be valid unless it is self-evident that the premises cannot be true unless the conclusion is true.

Chapter IV

TRANSITION TO THE CRITICISM OF MATERIALISM

1. *The Question at Issue*

We are not concerned with materialism as a purely scientific generalisation, but as a metaphysical theory claiming to be based on scientific evidence. We assume that from the standpoint of science mind and mental occurrences are found to exist when and only when certain material processes take place in living bodies. But metaphysical materialism takes a further step of tremendous significance. It asserts that the material conditions, which in the phenomenal order are uniformly present whenever mind is present, of themselves constitute the entire cause which immediately produces mind. What I deny is that this either follows from the scientific evidence, or is in itself tenable. On the contrary, I shall argue that the beginning of this or that mind essentially depends on pre-existing mind; in other words, that mind in general is not produced at all, but is, in some way, involved as a primary factor in the original constitution of the universe.

In asserting this, I take the terms 'mind' and 'mental' as essentially involving experience. No other meaning is relevant to the ensuing discussion. There is mind, in my sense of the word, wherever anything is experienced in the way, for example, of sensation, feeling, thinking, or striving. Inversely, where nothing is experienced, there is no mind in any sense which is relevant to the present question. An individual mind is an experiencing individual *as such*. Whatever else may be true about him, he is a mind only inasmuch as he lives through some kind of experience. What I mean by 'mere' and 'merely' when I speak of *mere* matter or *merely* material conditions is the absolute absence of any kind or grade of experiencing. This being presupposed, it makes no difference to the argument what else is included or not included in the conception of matter. It makes no difference whether we ascribe to it only primary qualities or also secondary. Similarly, force and energy, whether regarded as positively real or as merely conceptual formulas, may, for our present purpose, be treated as material, provided always that we carefully and strictly exclude any animistic view of their nature. If we read into them, however obscurely and unwittingly, anything analogous to our own experience of striving and effort, of doing and undergoing, we are already presupposing mind instead of starting from what is merely material.

On the same principle, we must not think of life as a middle stage bridging the passage from lifeless matter to mind. We have to decide between two exclusive alternatives. We may assume, however dimly and vaguely, that guiding and directing mind is required to account for the distinctive nature of vital process. On this view there is mind already wherever there is life, and the only relevant question which remains concerns the transition from lifeless to living matter. On the other hand, we may assume that life is no more than a highly complex system of material processes. Then, however peculiar this complex system may be in other ways, it is, so far as concerns our present problem, on the same level as other merely material occurrences.

2. *Why it is to be approached from the Psycho-physical Standpoint*

I approach the problem in the first instance by way of the relation of body and mind. I thus find myself confronted directly with the *primâ facie* scientific evidence in favour of materialism; and in dealing with it I have to think and speak in terms of causality and other categories of the physical sciences. I do so because there is no other way of meeting materialism on its own ground. But it may be held that the procedure is unphilosophical. The right course, it may be said, is rather to start from the relation of mind as subject to the material world and to the universe in general as its object. This is the order followed, e.g. by the late Dr Bosanquet. My reason for not adopting it is that it offers no secure prospect of coming to close quarters with the problems I am here raising. The question of the way we know external objects is initially distinct from the questions which gather round the association of minds with those particular portions of matter we call living organisms. We may feel that these questions must in some way be connected, and connected so that the first ought to throw light on the second. We may feel, for instance, that it would be strange and paradoxical if minds which are spectators of all time and all existence were merely transient products of conditions occurring here and there—if they were merely stray bubbles on the ocean of matter. There is a paradox here, but it is harder to show clearly and definitely that there is any real inconsistency. In order that the two lines of inquiry may be made to help each other, we must effect a junction between them; and in order to do this we have to keep both in view, and, so to speak, to start independently from both ends; and I find it easier and more advantageous to begin with the relation of body and mind. If we start from the subject-object relation and, descending to the mind-body problem, treat it, when we come to it, wholly or mainly from this point of view, we run, as I have said, a serious risk of never fairly grappling with materialism on its own ground. Instead we hover over it in a superior region. Thus Dr Bosanquet, after developing an elaborate idealistic system for the universe as a whole, when he comes to the more special problem, virtually takes the case for materialism at its face value, without further examination. Of course it would be absurd to call him a materialist. Still he can hardly be said to meet and criticise the reasons for materialism as the materialist himself conceives them.

Consider again the peculiar position and fate of Bishop Berkeley's philosophy. According to Berkeley the material world consists merely of a fixed and systematic order of sense-presentations, possible and actual. Further, he holds that sense-presentations exist only in being actually perceived—that their *esse* is *percipi*. He does not attempt, from this point of view, to give any definite account of the relation of body and mind. He ignores the problem as if he were purposely evading it, and indeed it is a peculiarly awkward one for him to answer. Yet it may well seem at first sight that he has left no place for materialistic views. Certainly he meant to leave no place for them, and thought that he had completely excluded them. But in this he appears to have been mistaken. When we come to work out his theory of matter in detail, it turns out that the occurrence of actual sense-experiences is determined by the systematic order of possible sense-experiences. In fact for him possibilities play the part of realities. They are thought of as persisting, changing and interacting with each other just as if they were actual existences. Now let us suppose not only that actual sense-presentations are thus dependent on the systematic order of possible presentations, but also that minds and their varying sense-experiences are similarly conditioned in their origin, continuance and cessation. Then we have a form of materialism. As a matter of fact, Mr Bertrand Russell at one time accepted and most ably and ingeniously developed what is essentially a form of Berkeley's theory. Yet Mr Russell, so far as I understand him, is quite definitely a materialist, and does not object to be called by the name.[1] Of course, there are other parts of Berkeley's system which are really inconsistent with materialism. But his special theory of matter, taken by itself, does not exclude it. Nor is there anything in Kant which either excludes it or requires it, if we set aside his practical philosophy.

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[1] Or he was so at one stage of his erratic career.

It is otherwise with Leibniz, Lotze and Spinoza. But it is characteristic of these thinkers that they approach the problem from both sides. Spinoza, for instance, devotes the first book of his *Ethics* to a general theory of the universe, and of the relation of thought to extension as its object; he then, in the second book, takes a relatively new start from the relation of body and mind in man. He endeavours to bring the two inquiries into unity so as to make his account of body and mind a special development of his general philosophy. None the less, in order to do this, he has to find a relatively independent point of departure in the more special problem, and this is one of the main reasons why his philosophy is interesting. Though we ought to keep both problems independently in view until we find them to converge, it is, at the outset, open to us to start from either of them. I choose to begin with the relation of mind and body as this appears to the physiologist and physicist. I do so because this is the only way of directly grappling with the positive case for materialism as based on scientific evidence.

3. *Why the Scientific Evidence is Inadequate*

After what has been said in Book I, it is not necessary to treat this topic at length. If the limits of science were coincident with the limits of knowledge or reasonable belief, the position of the materialist would be unassailable. But from the nature of the scientific undertaking this is a false assumption. The conditions which must be taken account of in order to assign general rules of sequence, co-existence and co-variation need not be the whole of the conditions on which events really depend. There may be, and in fact there constantly is, a background of other conditions which are not specified. All that is required is that there shall be ground for counting with sufficient probability on the presence of such conditions, whatever they may be. This is the course followed in all inductive reasoning and constitutes the reason why induction always falls short of absolute certainty, however great the probability which it may attain. The scientific evidence, we may admit, shows that the transient existence of finite minds and mental processes always depends on material occurrences, but it cannot, from the nature of the case, prove that it depends on nothing else. It is therefore an inadequate basis for metaphysical as distinct from scientific materialism. The materialist will answer that as experience yields no definite and detailed evidence of the existence of mind except in connexion with the bodily organisms of men and animals, there is an overwhelming presumption that the rest of the universe is mindless.[1] It is doubtless true that the sort of evidence on which science relies is found only in connexion with animal life. Before, however, jumping to the conclusion that mind does not exist where such evidence is not found, we must first answer another question. Assuming that mind really is universally present in nature, have we any reason to count on finding definite and detailed evidence of its presence except where we actually do find it?

When once this issue is raised it becomes plain that from the very nature of the evidence its range must be narrowly limited. It consists primarily in the knowledge which each of us has of his own existence as a self-conscious being. In the second place, it consists in the knowledge which each of us has of the existence of other minds through interpretation of the behaviour of bodies other than his own: and this is possible only if the bodily behaviour is sufficiently akin or responsive to our own. The less definitely these conditions are fulfilled, the more vague and uncertain becomes the inference. It is most definite and sure for human beings, and becomes more indefinite and precarious as we descend in the scale of animal life. But it seems a very unjustifiable anthropomorphism to assert that mind does not exist where the special conditions fail under which alone its existence can be revealed in this way to us. We ought perhaps rather to argue that since it is found where we have a fair chance of definitely recognising its presence, there is a presumption that it exists where such evidence is not accessible.

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[1] Common-Sense Animism is, of course, too vague for the purposes of science.

The same point may be put in another way. Suppose a mind widely removed in its nature and the conditions of its existence from our own. Suppose also that this mind has a very comprehensive and detailed knowledge of the material world, including the living bodies of men and animals. It might none the less fail to interpret the behaviour of human and animal bodies as evidence of the existence of human and animal minds. It might, for instance, find human bodies behaving so as to produce aeroplanes, or the bodies of bees behaving so as to produce honeycombs. Such events suggest a teleological order, the direction of process towards an end. But there is also a teleological order in the material world in general, especially in the immensely complex adaptations of the organic life of plants and animals, including the way in which living organisms are themselves produced and modified and developed in the course of evolution. Such a mind as we are assuming might simply regard the making of aeroplanes or of honeycombs as incidental to this general teleological order. The order itself it might take to be an ultimate fact, or attempt to explain it, let us say, by natural selection. Or again, finding such views unsatisfactory, it might go beyond the scientific evidence and postulate the general presence of mind in nature. The suggestion that besides this universal mind there are also individual minds in men and bees which help to account for aeroplanes and honeycombs would appear to it as perhaps possible, but as a rather wild hypothesis. However minute its scientific knowledge of the human brain, it would see nothing there to suggest mental life, any more than in the processes of digestion and respiration.

Now, if there are minds sufficiently remote from our own in their conditions and modes of behaviour, we should in like manner lack scientific evidence of their existence. *A fortiori*, we should lack scientific evidence of the existence of a universal mind.

4. *Plan of Treatment*

It follows that the evidence on which the materialist relies can, at the most, only justify him in claiming that his view should be provisionally accepted unless grounds can be shown for rejecting it. There is no presumption in its favour which can outweigh positive reasons against it.

In the next three chapters I proceed to give three arguments against it which, taken together and coupled with the animism of Common Sense, seem to me conclusive. Two of these start from the methods of science itself. The first may be called the argument from the Order of Nature. Its aim is to show that the supposed production of mind by purely material factors is utterly incongruous with the scientific conception of the Order of Nature as a system of laws. The second may be called the argument from the Persistence of the Changing in Change. Production everywhere else involves for science the continuance of the producing factors in the product. But in the supposed production of mind by matter there is an absolute breach of such continuity. This breach of continuity is not only utterly incongruous with the general scientific view of nature; it is itself quite unintelligible. The third argument is based on the agency of experiencing individuals as such. We have cogent reasons for regarding will and intelligence as contributing to determine the course of events; but this is quite incompatible with metaphysical materialism.

Chapter V

MATERIALISM INCOMPATIBLE WITH THE GENERAL ORDER OF NATURE

1. *Nature of the Argument*

According to metaphysical materialism, mind and mental occurrences are produced by purely material conditions. What I have to urge is that this involves an altogether inexplicable breach of continuity with the order of the physical world as a system of laws which science constantly seeks to discover, and on which it depends for its precision and certainty. As it is sometimes held that there is analogous discontinuity in the transition from non-living to living matter, it will be well to consider the biological before passing to the psycho-physical question.

2. *Order of Nature in Inanimate Matter*

Physical science in general, being founded on manifold relatively independent data, supplied by observation and experiment, has a corresponding multiplicity of independent starting-points, each raising distinct questions. Yet these different questions cannot, in the long run, be answered apart from each other. Each, when followed up, finds its answer only in the answers to others: and the answer to each again raises other questions which require to be dealt with in like manner. The aim throughout is to connect particular facts with each other as special instances of general laws. Further, the scientific ideal is never satisfied by special rules applying to limited groups of phenomena occurring only occasionally, e.g. the rule that water rises in the common pump when the piston is raised. Such 'empirical laws' themselves constitute problems which can be solved only by deducing them from, or exhibiting them as special applications of, more general laws, and ultimately of laws which enter into the general course and constitution of the physical world as a whole. Thus the several physical problems are ultimately parts of one problem, and the several physical sciences are ultimately parts of the one science which seeks to disclose a single comprehensive order of nature, a hierarchy of laws connecting with each other the particular data of observation and experiment. In this way physics and chemistry gradually develop towards the ideal of a single continuous system within which special laws are shown to hold between determinants of certain ultimate determinables such as motion, mass and energy, and to be deducible from the laws of these ultimate determinables. The ultimate determinables are themselves correlated and mutually complementary as essential aspects of the material world as a whole.[1]

This order of nature is not only presupposed by science as what it seeks to discover. It is also essential to the growing precision and certainty of inductive generalisation. An inductive generalisation increases in probability, not only with the number and variety of empirical cases which it covers, but also with the degree of determinateness with which it enables us to anticipate the specific differences which distinguish different cases. The greater the differences and the more exactly they are deducible from the same general formula applied under diverse conditions, the more probable is the general formula in its generality. It is so because it accords not only more widely but more closely with facts. Water rises to a certain height in the common pump when the piston is raised. This is a relatively crude generalisation which may mislead us, if, for example, we expect the water to rise to the same height at the top of a mountain and at sea-level. There is great advance in trustworthiness as well as in precision when we pass to the law that any fluid within a Torcellian tube rises until its weight balances the weight of the air pressing on the fluid outside the tube. Even in pre-scientific induction the principle of determinateness is operative and of essential importance, though in a less exact and systematic way. It is involved even in the primitive process through which the individual man or animal learns to adapt himself to his immediate environment, and to control it by varying adjustment of the degree and direction and combination of his movements and motor efforts to varying conditions of the same general nature, e.g. in lifting weights, in pushing or pulling, in balancing himself. Without such plasticity he would be unable to keep himself alive and to satisfy his elementary needs. It is indeed partly provided for by instinct; but, in the higher animals at least, the instinctive equipment is only a preparation for learning by experience —by inductive inference.

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[1] I do not commit myself to any definite view of what the ultimate determinables are. The history of science shows that our attitude on this question ought to be tentative and provisional. Compare, for instance, Descartes, Newton and Einstein.

Is it true universally that the general propositions with which induction is concerned assert a relation between a variable *a* and a variable *b*? I maintain that this is universally true, even when we rely mainly or wholly on constant and frequent repetition of instances in which an *a* is followed by a *b*. In such induction by 'simple enumeration' the general relation *a–b* need not indeed enable us, except perhaps in a very vague way, to connect a_1 with b_1, a_2 with b_2, etc. None the less, it is essential to the inductive process that *a* and *b* shall be variable so that further inquiry if carried far enough will inevitably lead to a search for some principle connecting specific values of *a* with specific values of *b*. Otherwise the repetition of instances, on which the induction depends, would be impossible.

Competent logicians now agree that mere repetition as such has no evidential value. The circumstances under which *a* and *b* are repeated must so vary as to make the principles applicable which are presupposed in Mill's 'Canons and Methods of Agreement and Difference'. But the point which I am insisting on is that there must be not only variation in the accompanying circumstances under which *a* is followed by *b*; there must also be variation in *a* and *b* themselves. As it occurs in any one particular instance, an *a* is a highly complex set of conditions. All of them are necessary to determine the occurrence of the particular *b* as it occurs in the particular instance, e.g. the death of some particular man through disease, accident or old age. The conditions fall under observation only partially and imperfectly. Even with advancing knowledge they can never be specified with complete fullness and exactness. Now if *a* is not a variable, its recurrence in another particular instance can only mean that it is precisely duplicated in all the complexity of its determinate detail. If there is the slightest difference in any respect, there is no longer an *a* but a *p* which may be followed by a *q* quite diverse from and unconnected with *b*. But precise duplication in the perpetual variety and flux of the material world can rarely, if ever, take place. If it ever does take place we cannot ascertain by observation that it does so, and its antecedent probability is vanishingly small.

The conception of the order of the physical world as a system of laws in which the more special are specifications of the more general seems not only to be presupposed in the ideal which science pursues, but also in all inductive generalisation, even the most rudimentary. But are we therefore entitled to hold that the more special laws are *deducible* from the more general? This is a question with which we are faced when we consider the peculiar nature of vital process.

3. *The Distinction of Animate and Inanimate Matter*

The matter of which living organisms are composed is ultimately the same as that found in lifeless bodies; and the occurrences which actually take place in it are, so far as science can ascertain, mechanical and physico-chemical occurrences. They do not occur in isolation but form an integral part of the general course of nature in the material world as a whole. Life consists in a series of transactions between living organisms and their non-living environment, e.g. assimilation and dissimilation, respiration, etc. In particular, there seems to be no independent source of vital energy, apart from the energy which is continually being redistributed within the physical world in general.

None the less, there are very important differences. Physico-chemical processes take place within living organisms which it seems practically hopeless to attempt to explain by deducing them from the more general laws that hold also for inanimate matter. There are two ways of accounting for this. It may be regarded as due merely to the immensely greater complexity of the conditions operative in vital process; or it may be referred not only to the complexity but to the peculiar nature of organic life as exhibiting a teleological order such as is nowhere discoverable except in living matter. Those who accept the first alternative are said to take a 'mechanical' view of life; those who accept the second are called vitalists. The advocate of the mechanical view holds that the special laws distinctive of vital process are nothing but special applications of more general laws which hold equally for non-living bodies. Within the inorganic world the same system of ultimate laws may yield very different results as the conditions of their application vary. Thus the law of gravitation contributes to explain such different facts as the fall of bodies on the earth, the tides, the orbits of the planets, etc. According to the mechanical view in biology, the peculiar set of conditions distinctive of vital process is only an extreme and immensely complex instance of such variations, involving no ultimate laws and no ultimate factors which are not common both to animate and inanimate matter. Hence for the mechanist it is at least a permissible hypothesis that life may have developed according to physical and chemical laws from a previous state of things in which there were no living bodies.

The vitalist, on the contrary, holds that for those parts of the material world which are alive, laws are operative which in spite of their special and limited application, are none the less ultimate and not simply derivative. They are held to be ultimate not merely in the sense that it is practically hopeless, owing to the complexity of the conditions, to show in detail how they can be derived from more universal principles; but also that by their own intrinsic nature as teleological they are essentially incapable of being so derived. Thus, if the vitalist is justified, there is, at this point, a real breach of continuity in that order of nature which physical science seeks to discover. Its advance in this direction is barred, not merely by the complexity of the problem, but in principle. Which of the two parties is right we need not here consider. What does require to be emphasised is that vitalism is radically inconsistent in principle with materialism.

The only support for vitalism is the peculiar and immensely complex way in which partial processes within the living organism are interrelated, interdependent, and coadjusted with each other and with the environment so that they apparently tend to realise ends prescribed by what can only be conceived as a plan or scheme. The assumption from which the vitalist starts is that this teleological order cannot, owing to its intrinsic nature, be accounted for by merely material conditions, however complex. What he needs therefore is precisely what metaphysical materialism denies him—an immaterial agency which in some way directs, controls and regulates the course of material process in living bodies; and this agency, if it is to work in the way required of it, must be of the nature of mind. It is not indeed necessary to posit a distinct 'vital principle' for each organism, guiding its physical and chemical reactions. But without the operative presence of mind in nature contributing to determine the course of events the conception of a tendency to the fulfilment of ends is quite unintelligible. 'Wherever', says Dr Haldane, 'there is need for an extra supply of oxygen, as, for instance, during muscular exertion, the membrane assumes an active rôle, and pushes oxygen inwards without regard to the mechanical laws of diffusion.'[1] Here something takes place just when it is needed to sustain the general life of the organism, as if it were intended to meet the need; and such an adjustment is a characteristic expression of the teleological unity of organic life. But what is the event itself which is described as an act of the membrane pushing the oxygen inwards? It does not follow from the mechanical laws of diffusion. But being a material occurrence it must consist in mechanical or chemical or physical process, or in something of the same general nature. How then is the action of the membrane conditioned if immaterial agency is excluded? We cannot say that the mere truth of this proposition—'if the membrane acts in a certain way a certain result, an increased supply of oxygen to muscular tissue, will follow'—is of itself an operative factor. Apart from the agency of beings who strive after ends, things do not happen simply because they are required in order that something else may happen. But if we entirely exclude any animistic view of life or of nature in general, there are no conditions left which are not material, and these must be fundamentally of the sort which we describe as mechanical or physico-chemical. The action of the membrane must be determined by its own previous state and constitution as a material thing, and by the whole complex of material factors and processes within and without the organism, of which it is a part.

The materialist then seems logically bound to take the mechanical view of vital process. But the inverse does not hold good. The mechanical view, as I have defined it, does not necessarily imply a materialistic view of life. It does so only if it is supposed to be sufficient of itself to account for teleological order. Otherwise, however true it may be,[2] it is not philosophically adequate. Merely material process being incapable by itself of accounting for teleological order, a factor must be presupposed which is not material but essentially akin to what we know as mind. But given such a factor there is an end of materialism. There is no attempt to make mind a product of merely material process.

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[1] *Life and Finite Individuality*, edited for the Aristotelian Society by H. Wildon Carr, 1918, p. 14.

[2] To me it seems true.

4. *Life and Mind*

If we follow up materialism consistently by excluding from our conception of life all reference, however vague, to any factor which is not material, it becomes entirely illegitimate to think of life as a transition stage bridging what would otherwise be a gap between inanimate matter and mind. In this respect it makes no difference whether or not the materialist regards the distinctive laws of vital process as deducible from more general laws. The point is that for him they involve nothing that is not material in the same sense as events in the inorganic world are so. Being thus of a piece with material process in general, it is at least an intelligible question, whether they can in principle be accounted for as special applications of the same ultimate laws operating under special conditions. But when we turn to the psycho-physical problem such a question not only cannot be answered but cannot be intelligibly asked. Experiencing is essentially disparate and discontinuous with merely material happenings, whether these take place in living or in non-living bodies. Further, for the purpose of the argument, it makes no difference what we comprehend under the term 'material' provided always that we rigidly exclude any kind or degree of experiencing. Wherever in the course of nature purely material conditions are supposed to give rise to mind the transition is equally abrupt and unmediated. It is not a whit easier to suppose that what happens in a human brain of itself produces thought, feeling and will than to suppose that they are produced by a piece of clockwork or by the burning of a candle or by the chemical union of oxygen and hydrogen. There is no variation in the conditions corresponding to variations in the supposed consequences. Wherever mind is taken to begin, it bursts into being like a shot out of a pistol that is not previously in the pistol. To speak here of 'emergent evolution' is nonsense: metaphysical materialism excludes the possibility of anything out of which experience could 'emerge' or 'evolve'.

5. *The Ontological Incoherence of Materialism*

What the materialist asks us to believe is that a certain complex of physico-chemical conditions occurring in a limited part of certain limited and transient bodies has effects utterly disparate in their fundamental nature from any effect which physico-chemical conditions produce elsewhere. The difference is not a difference between determinants of ultimate determinables such as mass, energy, motion; what is supposed to come into being is an absolutely new determinable which by its intrinsic nature cannot be a determinant of a higher determinable. It does not help at all to assume a special law which is not deducible from more general laws. What materialism requires is a special law which has *no sort of connexion* with more general laws. In other words the supposed production of mind by matter is entirely foreign to and discrepant with the whole order of nature in the material world. To use a metaphor due to J. F. Ferrier, it is as if a player at billiards should win the odd trick by a cannon off the red.

Is this apparent incoherence to be simply accepted, without further inquiry, as an ultimate matter of fact warranted by scientific evidence? The answer is that it is not a scientific fact at all and cannot therefore be an ultimate scientific fact. To suppose otherwise is radically to confuse science with philosophy. The student of physical science as such confines himself to his proper task of discovering the order of sequence, co-existence and co-variation of phenomena, treating mental occurrence merely as one set of phenomena among others. From this point of view, so long as he strictly abides by it, all that he can say is that he finds as a matter of fact that mental phenomena begin, continue and cease when and only when certain material processes begin, continue and cease. If however he also asserts that this is the whole relevant truth about the real universe, he is no longer asserting a scientific fact but an entirely untenable metaphysical theory. He is asserting fundamental incoherence as an absolutely ultimate fact; ultimate not only in the sense that he cannot account for it or even in the sense that no one can account for it, but in the sense that it is in reality absolutely groundless.

This position is so intolerable that it has rarely if ever been maintained in its nakedness. Materialism in its most usual form is an attempt, made from the standpoint of physical science, to avoid or rather to evade it. 'Mental phenomena' are treated as in some unexplained way unreal—as what Hobbes called 'phantasms' or 'apparitions', as merely unreal 'appearances' that do not, it is assumed, enter into the executive order of nature at all as real antecedents or real consequences. They are thus regarded as 'epiphenomena' absolutely dependent on certain material conditions but making no difference to the prior and subsequent course of events—any more than the shadow of a body influences its motions. But the perceptions, thoughts, feelings and strivings of experiencing individuals do really exist. If they are not real then we have no ground for asserting that anything is real. Metaphysical materialism, therefore, entirely fails to avoid the fundamental incoherence of scientific materialism. On the contrary, it aggravates it, by asserting the miracle of creation out of nothing, where the creator is not an omnipotent being, but a finite and transient complex of material phenomena.

6. *The Logical Incoherence of Materialism*

I have pointed out in Section 2 that the possibility or at any rate the degree of certainty of inductive generalisation depends on the order of nature as a system of rules in which the more special are special applications of the more general. In the supposed 'production' of mental occurrences by purely material conditions this order is interrupted completely and in principle. Hence arises a corresponding logical discontinuity.

From the standpoint of metaphysical materialism there is no way of accounting for the validity of that Common-Sense system of beliefs concerning the connexion of individual minds with their bodies which is involved in all social intercourse, and in all interpretation of the bodily behaviour of men and animals as expressing their mental life. But this Common-Sense system of beliefs is presupposed in all scientific treatment of the psycho-physical problem and in all philosophical theories about it—including materialism. Hence materialism cannot overthrow it without overthrowing itself.

Our interpretation of the observed bodily movements of others as evidence of the existence and nature of their mental processes is in some way grounded on the experience which each of us has of the relation of his own bodily movements to his own mental processes. It is very commonly held that the existence of any mind other than our own can originally become known to us merely through an inference by analogy from what each finds to be true in his own case. This position has been disputed for reasons which seem to me valid. But any alternative view assumes an original animism[1] which the materialist, approaching the question from the standpoint of physical science, must regard as illusory even if he admits its existence. Hence we might join issue with him by denying that on his view the individual could have any ground whatever for presuming the existence of any mind other than his own.

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[1] See Book IV, chap. VI, sect. 7.

But as this is not the point in which I am interested at present, I concede provisionally that the supposed inference by mere analogy is in principle possible. What I here insist on is that the mere analogical inference from an isolated instance can yield only an extremely slender degree of probability for the boundless range and complexity of the cases covered by the Common-Sense system of beliefs. From this point of view it can supply, at the most, only a tentative hypothesis to be verified by its detailed application in accounting for and enabling us to anticipate and adjust ourselves to the bodily behaviour of men and animals. Such verification logically presupposes a system of ultimate variables and specific rules logically analogous to but not the same as those which constitute the physical order of nature. It presupposes that the variable interests of experiencing individuals as such, defined and guided by their variable knowledge and belief are, in some way,[1] really operative as antecedent conditions determining in correspondingly variable modes the course of physical events. It presupposes that these events have a character and order which make it improbable, and in sufficiently complex instances utterly incredible, that they should take place independently of the operative presence of individual minds in connexion with individual bodies. The ultimate principle of highest generality is that the interest of the individual at any moment of his life-history tends more or less successfully or unsuccessfully to fulfil itself. The principle thus expresses the entirely distinctive way in which mind, owing to its intrinsic nature, contributes to determine the course of events. It is lost altogether if in stating it we attempt to substitute anything else for mind. In its detailed application the general formula covers a boundless range and diversity and complexity of specific cases, specialised by the variable nature of the relevant interests and of the circumstances which condition the various ways and degrees in which they fulfil themselves or fail of fulfilment. The whole system of Common-Sense beliefs implied in social intercourse rests on the fact that proceeding on this principle we are able to explain and anticipate the bodily behaviour of our fellow-men, and to co-operate with them in thinking and willing and in the pursuit of common ends. If metaphysical materialism is true, this procedure of Common Sense ought to be impossible, or if we suppose it possible it must be fallacious, so that its apparent success can be nothing but a casual coincidence and cannot logically warrant any inference to new cases. For its indispensable presupposition is that mind as such does really, in a quite distinctive way prescribed by its own intrinsic nature, play a part in determining what takes place in the material world. But this is precisely what the consistent materialist is bound to deny. The unconditional and immediate dependence of mental on material process which he asserts means, if it means anything, that the very existence of each mental occurrence at any moment depends exclusively on material events taking place at that moment. This is the only view warranted by the evidence to which he appeals, if the evidence has any value at all. He believes, on the finding of science, that mental 'phenomena' begin, cease, continue and vary when and only when certain nervous processes begin, cease, continue and vary. Treating this finding of science as a complete account of what really exists and takes place, he translates it into a metaphysical theory by asserting that the material events absolutely 'produce' the concomitant mental events. On this view, when a man, as we say in common parlance, moves his hand, his volition cannot in any way be a determining factor: the sole determining factor is the nervous process which gives rise to the volition as an idle accompaniment—an epiphenomenon.

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[1] Not necessarily that they are operative by themselves; my own view is that they are so only in union with bodily process, within the primary unity of the embodied self as known to us in self-consciousness.

In deciding whether we shall follow Common Sense or the metaphysics of the materialist, there can be no room for hesitation when once the nature of the issue is fully understood. In the first place, we are incomparably more assured of the general truth of the system of beliefs implied in our daily dealings with our fellow-men than we can be by any metaphysical theory which conflicts with it. In the second place, all scientific or metaphysical inquiries concerning the general connexion of mind and body in men and animals rest on the assumption that the connexion is already known to exist. If we ask how this can be known, the ultimate appeal must be to Common Sense. Materialism in undermining Common Sense undermines itself.

Chapter VI

MATERIALISM INCOMPATIBLE WITH THE NATURE OF CAUSAL PROCESS

1. *Causality in General*

The argument of the present chapter is complementary to that of Chapter v. I there urged that materialism is inconsistent with the order of nature as a system of laws, but I did not expressly take account of the fact that these laws either are or depend on *causal* laws, and so involve the relation of cause and effect. My point in the present chapter is that the supposed production of mental by merely material occurrences, considered in the only way in which it can be considered, as an example of causal relation, is quite unintelligible. By this I mean not that *we* cannot understand it but that it is from the nature of the case sheer nonsense.

I have already discussed the nature of causal process in dealing with Common-Sense animism.[1] Starting from Hume's position that the relation of cause and effect is an indispensable principle of inference in matters of fact, I also virtually followed Hume in maintaining that if it were *only* a principle of inference it could not be a principle of inference at all, and that consequently the whole development of knowledge through experience must be logically a gigantic fallacy. If the factual data are 'loose and separate' then no principle can possibly warrant an inferential jump from one logically isolated and self-contained fact to another. Causal connexion must be involved in the apprehension of the data themselves. If the process of inductive inference is to be logically possible, the initial data must belong, and must be known as belonging, to the context of a whole within which they have their conditions and consequences. How the conditions and consequences are to be specified in detail is a question which can only be answered gradually, and always more or less tentatively, in the development of knowledge through inductive process. The point is that the question must be grounded in the nature of things if the answer is to be grounded in the nature of things. Hence any theory of original data which does not satisfy this requirement stands self-condemned.

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[1] Book 1, chap. ii.

2. *Causality and Probability*

It is now generally agreed that in order to justify the belief that *B* will follow *A* something more is required than the bare fact that *B* has followed *A* in past experience. But is this 'something more' what is ordinarily understood by the relation of cause and effect? It may be thought possible to dispense with causality and yet to give a satisfactory account of the development of knowledge through experience. The only view of this sort that need be considered falls back ultimately on certain applications of the laws of probability, in which we infer the general constitution of a whole or 'collection' by sampling its parts. Taking handfuls from a cart of wheat and varying our procedure so as to make a 'fair selection', we find that all the samples are of good quality. Though we may not have examined more than a tenth part of the whole, we can infer, with a high degree of probability, amounting to practical certainty, that most of the wheat, or nearly all of it, is good. This kind of reasoning does not seem to depend, directly at least, on causality. All that one presupposes is that the whole or collection which we sample has a fixed and definite constitution. Now, it is suggested that what we call causal inference is, in ultimate analysis, of this nature. We have only to substitute for the handfuls of good wheat, instances in which *A* follows *B*. Then, if within that part of the universe accessible to our inquiry, we have observed a sufficient number of fairly selected instances, and if in these *B* always follows *A*, we may validly infer, with very high probability, that even unobserved instances of the occurrence of *A* are always, or nearly always, followed by *B*, at least within that part of the universe which we are considering.

Now there is no question that inference of this type does constantly play an important and even indispensable part in the development of our knowledge of the order of nature. On the other hand, I cannot admit that it is at all capable of fulfilling the function ordinarily assigned to causality. In the first place, it is clear that this procedure by 'sampling' cannot, in the first instance, account for the knowledge, or even for the belief, that anything actually exists beyond the immediate data of experience. For it starts by presupposing the distinction between a wider range of real existence and certain parts which alone fall within our experience, and serve as specimens giving a clue to the nature of others which are not perceived. But what is unobserved really corresponds, not to the samples of wheat, but to the whole cartful which is sampled. In the second place, reasoning of this type has no direct application to future occurrences; it can be indirectly applied to the future, only if we assume causality as an independent principle. It is needless to say that *we cannot directly sample the future as such*. Indirectly we can do so, but only on one condition. The future, before it becomes present, must be assumed to have a definite and predetermined constitution which is common to it and to the present and past. On this assumption we are justified in regarding specimens of the present and past as specimens of the future. But this assumption itself is entirely groundless, unless we suppose that what happens in the future is predetermined by present and past conditions. In other words, it is quite baseless unless we begin by taking causal connexion for granted. Otherwise, we have no valid reason for expecting that when *A* occurs it will be followed by *B*. Past events are fixed in their nature and order inasmuch as they are past. On the contrary, the nature and order of future events is unfixed, unless we take it to be fixed by past and present conditions. In sampling a cart of wheat, or a bag of billiard balls, the presumption that in future trials the collection will continue to be constituted in the same way as in the past is a causal inference.

Finally, even when we are dealing with past sequences as such, it is clear that reasoning from probability, though it is ultimately distinct from causal reasoning, is not independent of it. This becomes evident when we consider how we are to define the limits of the collection which we are supposed to be examining. If we include in it all the possible instances, throughout the whole universe, in which *A* may or may not have been followed by *B*, it is plain that anything like a fair selection of samples is impossible, and our result will be almost, if not altogether, worthless. The probability is greatest for 'adjacent' cases, and less for those which are remote. But what is meant by degrees of nearness and remoteness? No satisfactory answer is possible to this question, unless we presuppose causality. Mere nearness or farness in time and space are not of primary importance. What is of primary importance, both for the future and the past, is the degree of general resemblance between circumstances under which *B* has been already observed to follow *A*, and those in which we are to infer that it probably has followed or will follow *A*. If there is any striking and unprecedented difference in this respect, the probability is proportionately weakened. Why should this be so, unless the difference in the circumstances be regarded as possibly involving a difference in causal conditions?

We are also bound to recognise that, in order to account for its function in the development of knowledge, causal connexion must be necessary connexion. It must be such that if *A* is the entire cause of *B*, then, given the certainty of the occurrence of *A*, we can certainly infer the occurrence of *B*, and given that *A* has probably occurred, we can infer the occurrence of *B* with exactly the same degree of probability. But we have no right to predict that *B* certainly will take place, unless we are prepared to assert that it certainly *must* take place; and we have no right to assert that it will probably take place, unless we are prepared to assert that it probably *must* take place. So far as it is unlikely that an event *must* happen, it is likely that it will not happen. Whether or not causality involves necessitation in any other sense, it at least involves a necessity so far analogous to the logical connexion of reason and consequence, that taken together with the laws of probability it supplies a warrant for valid inference.

The function of the causal principle in the development of knowledge does not, therefore, at all depend on our ability, in any given instance, to assign with complete fullness and accuracy the entire cause. In view of the boundless complexity of nature we can never specify, or at least we can never be sure that we have specified, in detail, an actually existent complex of conditions which are severally indispensable, and together sufficient, to determine inevitably the actual occurrence of an event. Hence Mill's conception of a cause as an invariable antecedent on which an event unconditionally follows, though it must be valid as a regulative ideal in inductive process, is *only* a regulative ideal. We can never be unreservedly certain that some variation in unknown factors may not make a relevant difference. This is most obviously true in relatively primitive stages of inquiry. But even in advanced stages of scientific investigation we have always to presume with more or less probability (which may amount to 'practical certainty') the presence of a background of conditions that we cannot specify. This point is of great importance for the whole treatment of the causal relation in the present chapter.

3. *The Question Defined*

If I could assume the animistic view of causal process, there would be no need for further argument. But I cannot do so because I have to meet materialism on its own ground. It would therefore be a *petitio principii* to start from a doctrine which is flatly opposed to it. It would indeed be open to me further to develop the case for Common-Sense animism so as to show that it accounts for facts which are quite unintelligible on the materialistic theory. But I reserve this for the next chapter. Here I am concerned with other aspects of causal process.

The principle on which I proceed, and which I hope to strengthen in applying it, is that the causal relation can subsist only between parts of a whole having such a unity that difference in one part makes a difference to other parts. It cannot subsist between otherwise loose and separate items. I have already proceeded on this principle in discussing and rejecting interaction theories of the relation of body and mind. But I am not now especially concerned with interaction as the production by *A* of an effect in something else, *B*, as when a stone breaks a pane of glass; what I have to consider is production in the strict sense in which the union of oxygen and hydrogen produces water. I have to show that production of mind by mere matter implies a causal relation which has no analogue in the physical world and is from the nature of the case nonsense.

4. *Method*

It is arbitrary dogmatism to start from a ready-made concept of causation, without showing how it is justified, and then on this basis to proceed to lay down the law as to what causal relations are possible and what not. The result can only be a chaos of apparently conflicting views with no means of deciding between them or reconciling them. What some assert as evident appears to others groundless prejudice. Some maintain that the effect must in its general nature resemble the cause; others hold that the effect is something really new, and that we can prescribe no limit to the nature and degree of the novelty. Some cannot separate the idea of causal connexion from that of force or activity; others regard this view as an anthropomorphic prejudice rendered untenable by the advance of science. Plainly such conflicting tenets cannot really be all derived from analysis of a general concept which is the common possession of those who hold them.

In order to proceed more securely, we must have some recognised way of determining what we mean by causal connexion; only then, if at all, can we determine what evidently follows or does not follow from this concept. The appeal must be in some sense to experience. But what are we to mean by experience? Philosophers differ essentially in their use of the term. Are we, for instance, to accept Hume's view or Kant's? In order to avoid dogmatism we must not begin by building on any preconceived theory of knowledge; we must start with the knowledge itself which every theory of knowledge presupposes as its subject-matter if it is not to be entirely baseless. We must fall back on Common Sense and science. What is it that Common Sense and science rely on in relying on experience? It is not enough to say that they rely on particular 'facts' as revealed by observation and experiment. For the facts are relied on not merely in isolation as particular facts, but as evidence of at least the probability of general rules which enable us to anticipate other particular facts not thus ascertained. To rely on experience as Common Sense and science rely on it is to accept as ultimate whatever is implied in the validity of the inductive process, on which depends our knowledge of the world as a system of particular facts correlated with each other according to general rules. Inductive inference must be valid, and therefore the primary data from which it starts cannot be such as to make it invalid. But inductive inference, like all other inferences, must be *formally* valid, if it is to be valid at all. The conclusion may assert only a slight probability, but if this probability does not certainly follow from the premises, there is no valid inference. Inference simply consists in perceiving such a relation between premises and conclusion that the premises cannot be true unless the conclusion is true; and this relation must be the same for all inference of the same type. Further, the premises themselves must be such that they can enter into the required relation to each other and to the conclusion. If this is not true of Hume's 'Impressions' or Mill's 'States of Consciousness' it simply follows that these cannot be the original data of knowledge through experience.

It is from this point of view that we have to justify our concept of causation by an appeal to experience.[1] What is needed is such a concept as will make the causal principle intelligible as indispensably involved in the correlation of particular facts according to general laws. It is hopeless to seek for a causal principle as an independently evident 'ground of induction' apart from the inductive process itself. It is equally hopeless to treat it as an hypothesis or postulate verified by its application. For unless it is presupposed, verification of hypotheses is logically impossible. The causal principle is not in this respect exceptional. What is true of it is true of all principles of inference. The *dictum de omni et nullo*, for instance, is not self-evident independently of the evident validity of the syllogism. It is indeed evident from the 'nature of the case'. But what is the case? It is the case of any syllogism in which the conclusion is seen to follow inevitably from the premises. It is one thing, however, to infer this from that as occasion arises; it is quite another to attempt to disentangle in its abstract generality the relation of premises and conclusion which makes the inference cogent. Aristotle achieved this for the syllogism so as to leave little for his successors to do. The corresponding question for induction is far more complex and difficult, and it has not yet been adequately answered.

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[1] This is also Kant's meaning when he speaks of the constitutive conditions of 'possible experience'. But the Kantian doctrine is complicated by assumptions about phenomena and unknowable things-in-themselves, pure concepts and the disconnected manifold, etc., which seem to be false and baseless.

We may however safely affirm that the causal principle, though not sufficient, is at least indispensable. But what is required is not such complete knowledge of the causal process as will enable us to see in any particular instance that a certain set of fully specified antecedents must unconditionally be followed by a certain consequent. Such knowledge, as I have previously urged, is a regulative ideal[1] which is never completely realised. In examining the nature of causal process, what we have to do is to make explicit and distinct what is implicitly and obscurely taken for granted in this guiding ideal. We have to keep before us the question—What would be required for its complete fulfilment? At the outset, we must decide on the relative claims of science and unscientific Common Sense to throw light on this problem. I have argued that inasmuch as science is an abstract and one-sided development of human experience it may tend to ignore aspects of causation which are really essential even to science itself. On the other hand, the standpoint of science is, in other respects, to be preferred inasmuch as scientific knowledge of the causal order of nature is incomparably fuller, more precise and systematic. Further, it is the only standpoint which is here relevant: for we are meeting materialism on its own ground and materialism pretends to be based on science. We ought therefore to prefer the account given by physics and chemistry of what takes place when a candle burns to that of pre-scientific Common Sense. We must not, as Hume does, take as typical examples of the relation of cause to effect the fact that fire burns or that bread nourishes, as these facts may appear to the child or the savage. Otherwise we are in danger of ascribing to the positive nature of causal process what is really due to our ignorance.

There are accordingly three stages in the development of my argument. (1) I have to consider the concept of causal connexion, implied in the scientific ideal of causal explanation, which gradually comes to light as our knowledge of the causal order of the physical world becomes more complete, precise and systematic. (2) I have to show that the production of mind by purely material factors differs fundamentally from any causal relation of this type. (3) I have to show that there is not only difference but essential discrepancy, which makes nonsense of metaphysical materialism. Though these three stages are distinguishable, yet they run into each other in such a way that in what follows I shall treat them together.

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[1] I do not mean by this that it is not 'constitutive' as being a condition of possible knowledge through experience.

5. *The Scientific Ideal in General*

Change is not the beginning or ceasing of that which changes. When I stop writing and walk across the room there is a change in my state and relation to other things; but I do not lose my identity. Writing and walking are indeed different, but they are both successive phases or stages included within my continued existence. Now the ideal of causal explanation, as it comes to light in the progress of science, is to trace in a thoroughgoing way the continued existence of that which changes, in and through the variety of its successive phases. It is not satisfied with the mere occurrence of one state of things after another. What it seeks is to trace the transition through which what exists in one state becomes transformed so as to exist in a different state. The underlying concept of causal process is that a complex of pre-existing factors constituting the entire cause becomes redistributed and recombined and so modified by interaction as to pass into or 'produce' the entire effect. The intervening occurrences are successive transitions on the way to the final result; so that with adequate insight we might follow in imagination the passage of the initial state of things into that which follows from it as its outcome. The whole cause is thus, in one sense, regarded as continued into its whole effect. But inasmuch as the successive stages of change cannot exist together, it is, in another sense, equally true that the emergence of the effect implies the cessation of the cause. Prior states and relations of the persisting factors cease to exist in giving place to new.

6. *The Modern Mechanical View of Nature*

Greek Science partly anticipates modern developments, as in the atomic theory of Democritus, and the geometrical constructions of the Pythagoreans and Plato. In part, it follows a very different course, as in the Aristotelian Physics inherited by the schoolmen. But there is no conflict as regards the general principle of persistence. For Aristotle, what takes place in the world of becoming is always the transmission of a pre-existing 'Form' to a 'Matter' adapted to receive it. Everything must potentially be what it actually becomes.

In modern science, beginning with Galileo and Descartes, the principle of persistence finds expression in what is somewhat loosely called 'the mechanical view of nature' with its great fundamental laws, as that of the conservation of energy. It is found that a comprehensive and coherent system of causal laws can be traced only in terms of the primary qualities of matter—extension, position, configuration, motion, and energy considered as power of producing motion. Thus what takes place in the material world, so far as physical science can give a positive and definite account of it, consists in the redistribution of matter and energy, matter being regarded only as that which has position and is capable of changing its position in space, and energy being ultimately measured in terms of potential motion—potential change of place.

On this view there must always be a fundamental resemblance between cause and effect. Nothing actually occurs in causal process except the passage of one configuration into another, and the intervening process consists in motion. It is sheer absurdity to assert that thought, feeling, will, or anything that can be called experience can thus result from purely material processes. By hypothesis the only result is the spatial redistribution of matter and energy. On this view, the conception of causation essentially implied in the scientific ideal is flatly incompatible with materialism.

But secondary qualities present an analogous problem. If physical science can account for these in its own way, it ought, it may be said, to be able in like manner to account for the origin of mind. This point requires careful examination, which will be found to strengthen our main argument.

7. *Secondary Qualities taken as Physically Unreal*

Modern science is bound to find a reason for the fact that it is able to trace the course of physical nature only in terms of the primary to the exclusion of the secondary qualities. From the time of Descartes the traditional and orthodox view has been that the secondary qualities do not qualify matter at all, and cannot come into being as the outcome of purely material conditions. The only way to account for them is to regard them not as bodily but as mental. They are taken to be merely modifications of, or appearances to, a mind already presupposed to exist. They are only qualities of the sensa which we immediately experience in hearing sounds, seeing colours, smelling odours, feeling hot or cold. The sensa themselves, as well as the experiencing of them, are treated as mental and not material. Their being is taken to consist in being experienced. It may be that they do not arise except when a mind is acted on by material conditions: but it is only in the mind that they exist, and their entire cause must include mind in interaction with matter. They are merely 'subjective' modifications falsely ascribed to bodies.

This doctrine bids defiance to Common Sense. Apart from scientific theory, we cannot help believing that things are really coloured in fundamentally the same way as they are really extended. Nor is this belief upset by such facts as colour-blindness, and in general by the variability of sensation with variation in the way our sense-organs are affected, independently of difference in the things perceived. Variability of this sort is at least as obvious and frequent in the case of the primary as in that of the secondary qualities. It does not therefore supply a sufficient motive for regarding the primary as physically real and the secondary as 'subjective' modifications. This is borne out by history. The facts concerning the relativity of sensation were in principle known to the schoolmen, who never doubted the physical existence of colour, scents, etc., as well as to Descartes, who emphatically denied it. What really influenced him and his successors was that it seemed to them that a consistently mechanical view of nature could only be maintained if the secondary qualities were not material but mental; and they felt bound to maintain a mechanical view of nature, for the reason that this alone opens the way for causal explanation in accordance with the scientific ideal and the concept of causal process which it implies. Thus the doctrine that secondary qualities are merely subjective rests on the mechanical view; the mechanical view does not rest on it. The principle of persistence is violated if we suppose configuration and motion to produce colour and sound as physical existences; but if colour and sound are only subjective appearances, physical science may pursue its course without troubling about them.

Whether this position is philosophically tenable at all, it is at any rate quite incompatible with materialism. It starts by assuming pre-existing mind in interaction with matter. But the materialist goes behind this assumption and asks how mind itself is caused. His answer renews in an intensified form the very difficulty which the doctrine of secondary qualities as subjective is intended to surmount. If configuration and motion cannot of themselves produce colour, *a fortiori* they cannot of themselves produce sensation, feeling, thought and will.

8. *The Secondary Qualities as Physically Real*

The severance of the secondary qualities as mere subjective appearance from the primary qualities as physically real does violence to Common Sense, and, as we shall see in Book IV, it is philosophically indefensible. It ultimately depends on the assumption, based on the mechanical view of nature, that the secondary qualities do not enter into the causal order of the material world. But this assumption is unwarranted. We may admit that it is only in terms of the primary qualities that the causal order can be followed and formulated in accordance with the scientific ideal. But we must not confuse the limitation of scientific method with limitation of real existence. The secondary qualities may enter into causal process in a way which is beyond the reach of scientific theory. All that can be legitimately demanded in the name of science is that they shall not interfere with the mechanical order so as to break its continuity. But when we consider the relation of the primary and secondary qualities to each other, it becomes plain that there need not be any such interference. Causal relation in general presupposes the spatial or temporal diversity of the related terms; the secondary qualities, if they are physical at all, are not spatially or temporally separable from the primary. Colour, for instance, does not exist at a different place or at a different time from extension; it exists as coloured extension or extended colour, e.g. a red patch or a patch of red. Inversely, extension exists only as extension of colour or of some other secondary quality.

Before proceeding further there are two questions of terminology to be considered. If the so-called primary and secondary qualities are essential to each other, in what sense, if any, can they be properly contrasted as primary and secondary? Originally, the term 'secondary' implied that the qualities so called were not physically real. This doctrine being discarded, the only sense in which they can be secondary is that they play a secondary part in the scientific method of determining the causal order of nature through hypothesis and verification. The other question is about the use of the term 'quality'. When we speak of primary and secondary qualities, the term 'quality' is used in the very wide sense of predicable character. But it is also indispensably required in a more special sense. In this special sense there are no qualities except those which are called secondary. The merely spatio-temporal characters, such as size, shape, position and motion, which are commonly called primary qualities, are not, properly speaking, qualities at all. This ambiguity has helped to hide the fatal weakness of the subjectivist theory. In stripping matter of one set of qualities, the secondary, it still pretends to leave another, the primary. What it really does is to take away all qualities properly so-called, and it leaves only quantitative and relational predicates—a very difficult, and, as it seems to me, an intolerable position.

The alternative view which we are now considering is that the constitution and course of nature has throughout two aspects, abstractly distinguishable but not really separate, the mechanical or spatio-temporal and the distinctively qualitative. Neither causally determines the other; neither can be either cause or effect apart from the other. At this point, certain epistemological questions are likely to occur to the reader. These will be discussed in their proper place in Books III and IV. But to prevent misunderstanding I here briefly indicate some of the positions which I shall there more fully explain and defend. (1) Though it is only in sense-perception that we are primarily aware of either the primary or secondary characters, neither can be simply identified with the character of the sensum which we sensate in perceiving them; this varies with the bodily conditions of perception independently of variation in the object perceived. (2) As we cannot see, touch, or otherwise perceive such scientific objects as electrons, atoms, molecules, light waves, so we must not assume that physical qualities are limited to those which are accessible to our senses as colours and sounds are. We must rather assume that there is no such limitation, if, as we are now supposing, nature is throughout qualitative as well as mechanical. (3) There is however a most important difference in this respect between primary and secondary characters—a difference which suffices to explain why the primary are regarded as primary and the secondary as secondary. We can follow out in thought, and by various devices we can roughly represent in imagination, all the possible varieties of shape, size, relation, position and motion. We can, for instance, construct a model representing what we take to be the constitution of an atom. But we have no such power in the case of qualities—or, at any rate, our power is narrowly limited. If any one doubts this let him 'try to fancy any taste which had never affected his palate, or frame the idea of a scent he had never smelt'.[1] This difference between the primary and secondary characters supplies the reason why the former do and the latter do not lend themselves to the scientific method of constructive hypothesis and verification; and this difference in scientific value supplies the only good reason for calling the former primary and the latter secondary.

9. *The Argument from Persistence in Change*

If qualities and qualitative processes belong to the essential nature of matter, what difference does this make to the logical position of materialism? However absurd it may be to derive mind from purely material conditions, if we start from a mechanical view of nature, it may be held that there is no such absurdity in supposing it to arise through qualitative change. It may further be urged that we are ultimately ignorant of the qualities which may belong to matter other than those which we perceive by our senses. The nature of matter is thus, it may be said, largely a mystery, and it is therefore unwarrantable presumption to affirm that it cannot contain the 'promise and potency' of thought, feeling and will.

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[1] Locke, *Essay*, bk. II, chap. 2, § 2.

In order to deal with this position, we must first clearly define the point at issue. We may admit freely our great ignorance of the nature of matter. But if the materialist is to be consistent, he must not, under cover of his ignorance, include among the conditions which generate mind anything which is already mental. He must include nothing which already partakes, in however rudimentary a way, of the nature of experience, knowledge, feeling or will. The question is whether factors and processes which, in this sense, are absolutely non-mental can produce what is mental. The principle of persistence in change compels us to deny that this can be so. The radical disparity of nature between matter and mind is a bar to the transformation of either into the other.

This follows from analysis of what we mean by change, as distinct from mere succession or from an absolute beginning of existence. All change presupposes something which changes and remains identical with itself throughout the process. That which changes does not altogether cease to be, but passes through successive phases of its continued existence. On the other hand, it has no existence apart from its successive states and relations. It is not something in which they centre, or to which they are attached, as a hat is hung on a peg. The existence of that which changes consists only in the existence of its particular phases. It is identical, therefore, not as excluding these, but as including them in the complex unity of its whole being. This implies that they must be related in a peculiar way to each other. What is the nature of their connexion? No doubt we have here to do with an ultimate and unique form of unity which cannot be adequately described in terms of any other. But it may, none the less, be possible to assign conditions without which it could not exist. It seems clear that we must recognise as essential some generic resemblance of nature between successive phases of the existence of the same thing. When anything changes, it does so always in *some respect*. The change affects some general aspect of its nature, and its successive phases consist in specific and particular variations of this generic character. It is just for this reason that the successive phases are mutually exclusive, so that the beginning of one is the cessation of another. In the mechanical view of nature, the constant generic characters are position, extension and configuration; and actual or potential change consists only in actual or potential change of place.

The same applies, *mutatis mutandis*, to qualities. A sound regarded as a content of immediate sense-experience may change in loudness or pitch, or in any other general character which belongs to it as a sound. But could it become a smell or a colour? The suggested transition seems unintelligible, and we feel impelled to pronounce it impossible. The disparity of nature between a smell and a colour seems an insurmountable bar to the change of the one into the other. None the less, it would perhaps be going too far to assert unconditionally that such a change is impossible. We cannot conceive how it could take place. But this may be due to the lack of relevant experiences which would, if we had them, enable us to imagine a series of intermediate transitions gradually bridging the original gap between sound and smell or colour. Or, if the one quality cannot, however indirectly, become the other, there may be a relatively undifferentiated quality which has been gradually modified in divergent ways so as to give rise to both. Ward accounts in this way for the genesis of the special senses through gradual differentiation of a relatively homogeneous sensory continuum. In Book IV I shall advocate the view that this differentiation of the sensory continuum is a special phase of the qualitative process of nature in general. But no series of intermediate changes, however we may conceive them, brings an unexperienced quality any nearer to being an experienced quality. The transition from the absence to the presence of experience cannot be a change; it must be an absolute beginning of existence. We may see this from a different point of view when we remember that the different phases of a process or change are mutually exclusive, so that they can only exist successively. Thus a pure red, on becoming yellowish red, ceases to be pure red. But a pure red first unexperienced, and then experienced, would not cease to be pure red. The experience would simply supervene without any alteration of the pre-existing quality.

The vital point is that there is no generic character common to what is mental and what is not mental such that the difference between them can be conceived as a difference between specific modes of this common character. They are separated in their nature by the whole diameter of being. Hence we can never proceed from the one to the other by any process of transformation or rearrangement. A distinguished man of science[1] has said that we have 'not the faculty or the rudiments of the faculty, by which we can pass in thought from the one to the other'. Here, by 'passing in thought from the one to the other', he evidently means following in thought the passage of the one into the other. That this is impossible is precisely what I am maintaining. But the reason does not lie in the want of a faculty or in any impatience or ignorance on our part. We might as well ascribe to the want of a faculty our inability to see that 2 and 1 are equal to 4. The real reason is found in the ultimate nature of change. Change involves successive transition from one phase of the same thing to another, and the sameness of the thing means that it includes within its complex unity all its successive phases. But this is possible only if and so far as the different phases are specific and mutually exclusive variations of a generic character common to them all. Hence, what is absolutely non-mental cannot be transformed into what is mental. There is no generic nature common to both of which they are special variations. It follows that mind cannot be an effect of purely material conditions, whether we accept the mechanical view of nature or not. For, as we have seen, an effect must be a transformation of some part, at least, of its entire cause. If we say that what is mental is caused by purely material conditions, we must use the term 'cause' in a sense radically incompatible with that which we give it elsewhere. We must intend by it 'creation out of nothing'. But taken literally these words have no meaning. They stand for no conceivable process. When theologians assert that God created the world out of nothing, they intend to say that the dependence of the world on God is fundamentally different from that of effects on pre-existing causal conditions within the temporal order of nature. They mean also to mark their ignorance of the way in which the world depends on God. This is regarded as a mystery for finite beings, and known only to the Creator Himself. But it is plainly quite illegitimate to introduce a mystery of this sort where we are supposed to be dealing with an instance of causal process falling within the ordinary course of events in the material world, and where the dependence is not on an infinite and omnipotent Being but on certain occurrences within a human brain. Here we must either treat the conception of causality as irrelevant or we must mean by it what we ordinarily mean by it.

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[1] Tyndall, in a once famous address to the British Association.

Does it follow that we must deny the distinction between things which have experiences and things which have not? Are we bound to accept a mind-stuff or a monadistic theory? If so, it may seem to some that the remedy is as bad as the disease. But there is another alternative. All that is required is that mind shall through and through enter into the constitution of nature and give to natural processes a character and implications which could not belong to them if they were merely material. On this assumption we may account for a physiological disposition's being also a mental disposition, and we may find justification both for the mechanical and the teleological views of organic life. The mind operative in nature may express itself in various ways. The emergence of experiencing individuals at certain stages in the course of natural process is one among others. If this view turns out to be the only tenable view, the argument against materialism is virtually an argument for the existence of God as the universal and eternal mind.[1]

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[1] Cf. Book IV, chap. vii, sect. 5.

Chapter VII

MATERIALISM INCOMPATIBLE WITH TELEOLOGICAL ORDER

1. *Introductory*

In Book I, chapter ii, I considered the distinctive nature of teleological order, and I provisionally defended the animistic interpretation of it which is natural to Common Sense. I allowed, however, for the possibility that the initial case for the animistic view might be upset by the advance of science and philosophy. But science is relevant only so far as it is supposed to justify a philosophical theory. Is there then any philosophical theory which can give a tenable account of teleological order without presupposing the operative presence of mind working in a distinctive way prescribed by its own uniquely distinctive nature? I have now to argue that such an account is just what the consistent materialist is bound to give, and what he signally fails to give; also, that if he fails there is no other defensible view except some form of animism.

Where there is a conflict between Common Sense and one of its specialised outgrowths such as science or philosophy, the two parties to the quarrel are not on the same footing. Common Sense is superior because the ultimate decision must rest with it, however indirectly. There are in the long run only two ways in which the specialist can succeed in making his case good. He may be able so to explain what he means, and the reasons for it, as to show that it is really not incredible. But the explanation must be such as to satisfy any representative of Common Sense competent to understand it. Thus Common Sense finally decides the question. If a mutual understanding cannot be reached in this way, the specialist may still be able so to explain the reasons which convince him as to convince

Common Sense also, without really removing its initial difficulties. Though the difficulties are still felt, it is admitted that the specialist must be right in spite of them. But Common Sense, when once it is brought to understand the reasons, is the ultimate judge of their cogency. A philosophical theory which is incapable of justifying itself to Common Sense in either of these ways is finally indefensible.

I argue in the present chapter that materialism is in this position. The argument hinges on two propositions: (1) that apart from mental agency teleological order is inexplicable, and (2) that there can be no mental agency if the materialist is right. I have already used both (1) and (2) in treating of the external behaviour of men and animals as evidence of their mental processes.[1] In what follows I shall be concerned with teleological order, as found not only in human and animal behaviour, but also in nature generally and in the mind itself. But the conflict between materialism and Common Sense refers primarily to human actions and their results; all other relevant questions arise out of this, and therefore we must begin with it.

2. *Materialism and Human Behaviour*

According to the materialist, mental events are utterly dependent for their very existence on the brain-process which takes place at the moment of their occurrence. The brain-process absolutely produces or rather creates them. It follows that only the brain-process can be operative in determining the further course of events in the body itself, and indirectly in its environment. Perception, thought, feeling and will cannot be even contributing factors. They can be only idle accompaniments. If the materialist is right there is no absurdity in the view that human will no more contributes to determine bodily movements than the shadow which the body casts. In general, if the materialist is right, it ought to be quite credible that the constitution and course of nature would be otherwise just the same as it is if there were not and never had been any experiencing individuals. Human bodies would still have gone through the motions of making and using bridges, telephones and telegraphs, of writing and reading books, of speaking in Parliament, of arguing about materialism, and so on. There can be no doubt that this is *primâ facie* incredible to Common Sense. The materialist, therefore, can maintain his position only in one or both of two ways. He may show reason for it so cogent as to compel Common Sense to swallow it in spite of its apparent absurdity, or he may so explain it as to show that the absurdity is merely apparent. These are the only alternatives open to him, if I am right (and I do not see how I can be wrong) in asserting that the consistent materialist must deny mental agency. But it is possible that he may refuse to admit that the denial of mental agency really is implied in the theory that mind is produced by merely material conditions. I shall presently argue that even if this were otherwise admissible, it would not improve his position.

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[1] Book II, chap. v, sect. 6.

3. *Teleological Order in Mental Process*

The outward behaviour of men and animals, and such results of their action as bridges or poems or birds' nests, have a teleological character only so far as they correspond to what goes on in human and animal minds. The outward teleological order is a reflection of the inward, which consists in unity and continuity of interest, connecting the various stages and phases in the life-history of the experiencing individuals as such. The principle is the same whether the interest is that of a salmon leaping, or of a bird building its nest, of Watt inventing and constructing his steam engine, or of Newton discovering, applying and expounding the law of gravitation.

In strict consistency, the materialist ought to regard the teleological character of mental process as entirely and immediately dependent on bodily and especially on brain-events. Each stage and phase in the life-history of an experiencing individual being severally produced by nothing but the changing states of his brain, none of them can causally determine others. A voluntary decision would not, on this view, depend at all on previous deliberation, or a conclusion on previous reasoning. The voluntary decision and the previous deliberation, the conclusion and the previous reasoning would all alike be completely determined each by its own physiological conditions.

Suppose that the materialist, shrinking from the logical consequence of his own doctrine, puts forward the view that mind, though in the first instance absolutely dependent on matter for its existence, may, when once it is in being, be operative in causal process. He thereby sacrifices consistency without otherwise improving his position. He has admitted that teleological order in mental process and in outward behaviour cannot be accounted for without mental agency. But if mind is merely a creature of the brain, mental agency must be so too. The materialist therefore gains nothing by assuming its existence; for he is still bound to hold that all teleological order is ultimately due to merely material conditions. In addition to this he parts company with the scientific facts from which he started, and incurs all the difficulties of interactionism.

4. *The General Teleological Order of Nature*

The adaptive behaviour of men and animals, which Common Sense refers to the will and intelligence of embodied minds, is only part of the immensely more comprehensive teleological order of the material world in general. This includes the complex organisation of factors and processes in the life of plants as well as of animals. It includes also the systematic complexity of atoms and molecules and of their interrelation, e.g. in the carbon compounds. It is traceable throughout nature both animate and inanimate. Indeed, as life is only one side of the transaction going on between organism and environment, teleological order must belong to the whole physical-chemical process in which both are essentially implicated.

The adaptive behaviour of men and animals, which is in some way correlated with their mental processes, is not only part of this general order; it is a part which is through and through dependent on the whole. It is only by an artificial abstraction that we have so far considered it separately in inquiring whether it can have its source in merely material conditions. When we consider it in relation to the general teleological order of nature the whole question at issue takes a new form. It opens the way for the most plausible defence of materialism in its conflict with Common Sense; and this defence, breaking down, leaves the position of the materialist more hopeless than ever.

If mental agency is required to account for teleological order, it is not sufficient to attribute agency to human and animal minds or to any minds similarly conditioned. Granting that the interest of such experiencing individuals works towards its own fulfilment, yet it works only through the connexion of the mind with its body. Hence it is only one factor in an immensely complex system, apart from which it could not be operative at all.

I will to throw a stone and the bodily movement follows. But it follows only because my nervous and muscular systems, my organs of sense, my bodily organisation in general, are elaborately preadjusted so as to make it possible. Now, I certainly did not fashion my own body. I may have modified it in a relatively small degree by my previous actions, e.g. in acquiring by practice certain special aptitudes and modes of behaviour. But in the main I find it ready made. If we admit the hereditary transmission of acquired habits, it is possible that the actions of my ancestors may have helped to mould it and prepare it for my needs. But if we push this sort of explanation as far as it will go, it will not cover the facts. Wherever mind is found, whether in myself or in my remote ancestors, it presupposes as its antecedent condition an elaborately organised and preadapted system of factors and processes predetermined for it and not by it. It would seem, therefore, that independently of guidance and control by the minds of men and animals, the material world of itself takes a course preadjusted to the existence and development of conscious life. This being so, the materialist may argue that we can and ought to account in the same way for voluntary movements without assuming that they are causally determined by the will. If this implies a coincidence for which no reason can be given, the coincidence is fundamentally of the same sort as that which is found in the relation of conscious life in general to its material conditions.

The whole gist of the materialist's argument is this: we are dealing with a group of facts so akin to each other, and so connected with each other, that they ought to be treated in the same way; it is inconsistent to follow a certain principle in accounting for part of these, and yet refuse to apply it to the others. The presumption is that if it does not apply to all it does not apply to any. If the agency of mind is not needed to account for the whole complex system of adaptation, whereby material conditions are adjusted to the requirements of experiencing individuals as such, neither is it needed to account for that part whereby bodily actions conform or tend to conform to the will. If, on the other hand, the fulfilment of human interests is unintelligible unless we assume that they tend to their own fulfilment, we ought, in consistency, to interpret in the same way the whole system of adaptations. We ought to posit mind as a factor determining the whole constitution and course of nature which gives rise to the living organisms of men and animals and plants. The weakness of the materialist's position is that it tacitly passes by this last alternative, as if it did not deserve to be considered.

5. *Failure of Materialism to account for the General Teleological Order of Nature*

If there is no mind except what is limited and conditioned by its connexion with particular bodies, as in man and animals, the teleological order of nature in general must be merely material. Either it arises in the course of material conditions or it belongs primarily to the constitution of the material world. On either view, there can be no real absurdity in holding that human behaviour, which is a partial and dependent phase of the general order, can also be accounted for directly or indirectly by purely material conditions. This argument, if its premises are admitted, may well suffice, not indeed to satisfy, but to silence Common Sense.

It rests, however, on the initial assumption that there is no possibility of the operative presence of mind in nature. On what ground does the materialist take this for granted? His only reason is that science, in discovering and formulating the laws of material process, does not and cannot take account of any facts which are not material. But, as I have constantly insisted, it is a leap in the dark to assume that what science can for its own purpose ignore, does not really exist. The argument would be cogent only if we were bound to hold that mind in nature, if operative at all, must work in such a way as to interfere with the scientific order and so make impossible the actual achievements of science. But if matter and mind are throughout correlated in an essential unity so that neither can exist or operate apart from the other, neither need interfere with the other. If we do not begin by ruling out the possibility of the operative presence of mind in nature, the argument urged in support of materialism may be inverted and turned against it. The teleological character of human behaviour being only a partial phase of the teleological order in nature, we must interpret this on the same fundamental principle. But it is incredible that human behaviour should depend on purely material conditions. Therefore it is incredible that the general order which comprehends it should depend on purely material conditions.

If we are to explain the penning of the manuscript of *Hamlet* by Shakespeare as the result of purely material causes, we must presuppose an appropriate predisposition of Shakespeare's body and of its environment, involving an immensely complex union and most intricate inter-adjustment and interdependence of chemical, physical and mechanical factors and processes. We must also explain in the same manner the behaviour of other human bodies in printing the play, acting it, praising it, writing about it, and so forth. But how are these prearrangements themselves caused? On the same principle they must be the outcome of a prior grouping of material factors and processes specially adjusted so as to give rise to them. Nor is there any end to this regress except the beginning of the whole material system, if indeed it has a beginning at all. Thus we must assert that the special disposition of Shakespeare's body, which gave rise to the movements of his hand and pen in writing *Hamlet*, was entirely predetermined by the predisposition of matter and energy countless ages before the solar system came into being. This seems so absurd that absurdity is too mild a term for it. But why should it be absurd? After all, the material world must have some determinate constitution, and why should it not be constituted in this way as well as in any other way? The answer of course is that what is incredible is the coincidence between what follows from the mere flow of material events according to physical, chemical and mechanical laws, on the one hand, and the conditions required for the expression and fulfilment of intelligent thought and will, on the other. Shakespeare's thoughts, aims and purposes are supposed not at all to determine the movements of his body: these are entirely predetermined by the previous constitution and course of the material world; and yet, at the moment when he wants to express his thoughts in writing, the required processes, combined and adjusted in the required way, take place in his brain and muscles so that his hands move a pen and make the marks on paper which constitute the manuscript of *Hamlet*.

This is either due to a pre-established harmony, or it is casual coincidence: if it is due to a pre-established harmony, then we must assume a universal mind prearranging the whole system from the outset, and this is quite inconsistent with materialism. On the other hand, the alternative of casual coincidence seems altogether preposterous. But where precisely does the absurdity lie? If we consider only the general nature of material process and the general laws of interaction between the parts of matter, we can find, so far, no reason why all the movements of our bodies should not be produced by purely material conditions, mechanical, chemical and physical, in strict accordance with material laws, or why these in their turn should not be the outcome of antecedent material conditions, and so on endlessly. This may very well be true; there is evidence for it and none that is conclusive against it. If it is true, it only serves to confirm the position that teleological order in human behaviour is one with teleological order in nature, so that both must be interpreted in fundamentally the same way. Otherwise it is irrelevant to the present issue. What is vitally relevant is that the general nature of matter as expressed in the general laws of material process is in itself indifferent to teleological order, whereas mind and the laws of mental process, as involving unity and continuity of interest, are essentially teleological. The general laws of material process cannot of themselves account for any concrete effect which takes place in accordance with them. There is also needed a complex of concrete conditions such and so combined as to make the general laws applicable. Teleological order is a distinctive way in which the concrete conditions are grouped and coadjusted. It is the kind of order that, at least *primâ facie*, suggests mind as its source. The motion of the hands of a watch is not explicable merely by the general mechanical laws according to which its parts interact; there is also presupposed the special way in which the parts are united and coadjusted in conformity to a plan in the mind of the watchmaker. What Common Sense finds incredible is that this conformity to plan should be brought about merely by motions of the watchmaker's body without the concurrent agency of his mind working towards the satisfaction of interests and the fulfilment of purposes. Such a view is immensely improbable in this selected instance, and becomes infinitely more so when extended to human action in general.

It may be said that the reference of human behaviour to mental agency is warranted only by the independent knowledge that human beings have minds, and that therefore we have no right to interpret the teleological order of nature in the same way. At this point I go back to the argument of Book II, chap. V, sect. 6. I know myself as an experiencing individual through self-consciousness, independently of external data. But the belief which each of us has in human and animal minds other than his own is essentially dependent on the interpretation of bodily behaviour. The certainty of it rests on the principle that the external behaviour would not be such as it is if it were not due to the operative presence of human and animal minds. In this respect teleological order in human behaviour and in nature are logically on the same footing. In another respect however there is a great difference. In dealing with our fellow-men, the principle of mental agency, as I have pointed out in the passage referred to, is verifiable in detail in a way which makes doubt absurd. But in its wider application it is not, from the nature of the case, capable of being verified or falsified in this way. Hence if the wider application is taken, as it commonly is, to be based only on inference by analogy, e.g. the analogy between the human eye and an optical instrument, there would only be a slender presumption which might easily be upset by reasons to the contrary. What I now contend is that the main reason urged against it really clinches the case for it. Suppose, as the consistent materialist must suppose, that the manuscript of *Hamlet* came into being as the result of interaction between Shakespeare's body and his environment, so that a sufficiently advanced physical science could explain what occurred in its own way, without reference to Shakespeare's mind. Suppose that Shakespeare's body, and the occurrences which took place in it when the play was written, are similarly traceable to material conditions and processes, which are themselves part of the general course and constitution of the physical world. If it is nevertheless incredible that Shakespeare should have written the play unless he were not merely a body but an embodied mind, we are bound in consistency to extend the same principle of mental agency to the whole process which includes the writing of *Hamlet* as a partial phase. Mind in Shakespeare implies mind in the universe to which he belongs.

This reasoning is unaffected whether we regard teleological order as originally belonging to the constitution of the material world, or as arising from a previous state of things from which it was absent. But the second alternative may be made the basis of a plausible objection. Assuming, what materialism necessarily implies, that the material world has no beginning in time, it must pass through an infinite series of stages before reaching its present constitution. There is, it may be urged, no antecedent improbability in the view that the process of shuffling and reshuffling gives rise to the present state of things as one of the infinite successive stages of its history. I reply in the first place that any actual stage of the infinite process is only one of infinite alternatives equally consistent with the nature of matter and the fundamental laws which hold for every stage. We must therefore take into account not only one infinite series but an infinite number of possible series; and, for any one which could give rise to some such teleological order as now exists, there are an infinity of others which would not.

Even if we set aside abstract considerations of this sort, the materialist has still to face an objection which he is powerless to meet. Grant that my living body may or even must come into being through the endless shuffling and reshuffling of merely material factors. How is it that at the same time a mental life arises to which the body is adapted, and preadapted, in an immensely complex and elaborate way? How is it that when I have certain thoughts and a desire to express them there is a certain material system so prearranged that the part of it which I call my hand grasps a pen, dips it in ink, and moves it in such a way that my thoughts find expression, however imperfectly? Suppose it to be conceded that what takes place is inexplicable apart from my mental agency; it is utterly inconsistent to stop short at this concession. For my mental agency is possible only through an immensely complex system of conditions preadjusted to it. These conditions themselves arise out of the previous course of events in the material world, carried backward into the indefinite past before there was any living matter, and carried forward into my present bodily movements in writing what I am writing now. We cannot interpret one essentially dependent part of this continuous process as implying mental agency, and yet refuse to interpret on the same principle the whole which includes it. There is a vast multitude of facts not only analogous to each other, inasmuch as they present teleological order, but interwoven in one context. By assuming mental agency in nature as well as in human and animal life, we can bring them, in spite of diversity, under one principle, and if this principle is rejected, there is no other which will cover the facts.

6. *Concluding Remarks*

I have in this chapter dealt with questions at issue between the supporters and opponents of the design argument for the existence of God, and I have answered these questions in a sense favourable to its supporters; but it must not be supposed that I am here myself putting forward that argument, or that I am here raising the question of the existence of God at all. Again, I have not at all inquired whether teleological order in human life and in nature, and the mind which it implies, are good or bad in detail or on the whole.

Such problems do not fall directly within the scope of the present volume. I shall have to deal with them in a further work which corresponds to another part of my Gifford Lectures. What I directly attempt in this present instalment of my work is to prepare the way for their discussion, so that when I come to deal with them I may not be fairly charged with making assumptions for which I have not given reasons.

Chapter VIII

TRANSITIONAL: THE EMBODIED SELF OF SELF-CONSCIOUSNESS

1. *Inadequacy of the Scientific Standpoint*

There are two radical defects in the view of the relation of body and mind which is reached by approaching the problem from the standpoint of physical science. In the first place we part company with the animism of Common Sense. Hence the existence of mind or 'mental phenomena' appears an exceptional or sporadic occurrence incongruous with the general order of nature. In the second place, we fail, from this point of view, to find any communion of body and mind. We find no single concrete experience into which both enter as intrinsically inseparable and essentially correlated factors. Yet unless such communion is assumed, both interaction and parallelism remain unintelligible. This difficulty is the more fundamental, and we have here to inquire whether there is any satisfactory way of meeting it. There is certainly none so long as we assume that the body, like other material objects, is known only through external perception, whereas self-consciousness reveals only mind.

As against this view, which is historically traceable to Descartes, I maintain that there are two fundamentally distinct ways in which the experiencing individual apprehends his own body. Each individual feels his own body, as it enters into his own subjective being, as contrasted with external objects. He is primarily aware of his own body in self-consciousness, and no one but himself can be thus aware of it. In this way and only in this way he knows, not by inference but immediately, the unity of body and mind as inseparably correlated factors within his own indivisible being as an embodied self. On the other hand, the individual is also cognisant of and interested in his own body in quite another manner, as one external object among others. He may by means of his own sense-organs observe his own body as he observes the bodies of other men, or as he observes trees and stones. He may accept the testimony of others for what he cannot thus observe himself. He may make inferences from the bodies of others to his own; e.g. that he has brains in his head because he discovers brains in other heads when the skull is split open. From this external point of view no unity of body and mind is discernible. On the contrary, they seem to fall apart as separate and mutually exclusive. Now it is only from the standpoint of external observation and experiment that physical science, including anatomy, physiology and biology, considers animal and human bodies. For the student of physical science as such, his own body is just one portion of the material world, and his aim is to bring it within the system of fundamental laws and concepts which hold for the material world in general. So long as he keeps within this his proper province he need not take account of mind at all, or officially recognise its existence. The psycho-physical problem is a strange and troublesome intruder from outside. It emerges only with the reflection that physical science, even if it completely realised its ideal, would not cover the whole field.

There is a residuum which cannot be denied or explained away. The man of science cannot deny his own existence as a knowing, feeling, and willing individual. Otherwise he would be denying the existence of science itself and of the experience on which it depends. He is thus bound to recognise that in self-consciousness there is revealed something which falls outside the range of physical science. But he naturally assumes that whatever is knowable about the material world can be known from the scientific standpoint of external observation. Hence he naturally assumes that what self-consciousness or introspection reveals is mere mind, and is thus led to contrast purely mental phenomena with purely material phenomena. Thus the original unity of the embodied self is dissolved in such wise that body and mind appear as two separate existences which have no intrinsic connexion with each other, but are merely found or inferred to be conjoined with each other as a brute matter of fact. The body as known to the physiologist, anatomist or chemist is simply substituted for the bodily coefficient in the whole experience of the self as embodied. The fallacy is entirely natural and excusable in the professional student of physical science. But why has it not been adequately corrected by philosophers? The reason seems to be that the way in which the psycho-physical problem has generally been conceived in modern times is traceable to Descartes, the 'Father of Modern Philosophy', who was himself dominated by the scientific bias in an extreme form.

2. *The Fallacy of the Cartesian Dualism*

The point at issue is the interpretation of the formula—'Cogito ergo sum'. According to Descartes, what I am certain of in self-consciousness is nothing but my own thinking, and therefore my own being so far and only so far as my being consists in thinking.[1] This certainty stands by itself as separate and independent; for it is unaffected even though we doubt or deny the existence of everything else, including our own bodies. I cannot consistently deny my own existence as a being who doubts or denies. But if I can be thus certain of my mental existence without being certain of my bodily existence, it follows that I am essentially mind, not body. '"I am—I exist": this is certain; but how often? As often as I think; for perhaps it would even happen, if I should wholly cease to think, that I should at the same time altogether cease to be. I now admit nothing that is not necessarily true: I am therefore, precisely speaking, only a thinking thing, that is, a mind.'[2]

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[1] Thinking is taken to include all modes of experience—desire, feeling and volition—as well as cognitive process.

[2] *Med.* II (tr. Veitch).

Descartes here proceeds not by an immediate appeal to self-consciousness, but by an argument which is ultimately a *petitio principii*. Why does he assume that we can doubt or deny everything else about ourselves while remaining certain that we think? No doubt it is the fact that we think which makes it possible to be certain of our existence in a way in which we are not certain of anything else. But it is sheer confusion to infer that therefore *what we are certain of*, as distinguished from what makes us certain, is merely our being so far as our being consists in thinking. The source of the certainty is one thing; its range is another.

What Descartes really relies on is a principle which he dogmatically assumes from the outset in his initial experiment of doubting whatever is capable of being doubted. His whole method of procedure tacitly presupposes that doubt does not extend to the existence of ideas, but arises only when we inquire whether our ideas have a counterpart in real existences beyond them and resembling them. Instead of testing this assumption by the evidence of self-consciousness, he still continues to take it for granted, and applies it to determine *a priori* what we are and what we are not certain of in being certain of our own existence. For this reason he assumes that we can be certain that we are minds but not that we are bodies. The question what self-consciousness in fact does reveal is not followed up at all. The main reason why Descartes proceeds in this dogmatic way seems to be that he is prepossessed by the scientific bias. For him the nature of matter can be accurately and adequately apprehended, as it really is, only from the scientific standpoint. But the only true science is that which follows the mathematical or geometrical method which he had himself formulated and faithfully applied. Whatever apparent aspects or features of the material world do not lend themselves to treatment by this method cannot therefore belong to the nature of matter as it really is. Hence he reaches the conception of matter as a substance whose being consists in being extended. All the special adjectives of material things are variable modes of this one fundamental attribute. Extension is the one ultimate determinable of which they are determinants. But thought and feeling are not ways of being extended, and extension is not a way of thinking and feeling. Hence matter and mind fall apart, each self-contained in its own nature and existence, so that it becomes a hopeless enigma how they can communicate with each other as constituents of the same universe. How can mind know matter and not merely the supposed modes of thought which Descartes calls 'ideas'? How is that union of mind and body possible which Descartes himself recognises as an ultimate fact? How can my mind be 'so intimately conjoined and as it were intermixed with its body that my mind and body compose a certain unity?'[1] If self-consciousness reveals not mere mind but embodied mind, we have a key to this enigma, which seems otherwise a hopeless puzzle.

3. *For Common-Sense Mind is essentially embodied*

In the form in which it presents itself to the student of physical science, or to the philosopher who starts from science, the psycho-physical problem can hardly be said to exist for Common Sense. It is a technical problem which does not emerge in ordinary experience. Mind and body are not primarily apprehended as distinct *things*; mental processes are not taken apart from bodily in such wise as to raise questions concerning the way in which they are combined with each other. What we are primarily aware of is the individual unity of an embodied Self. It is this which is signified by the personal pronouns 'I', 'you' and 'he'. Consider the phrases: I see the moon, I hear a bird, I handle a knife, I walk from this place to that, I feel a wound, I am in prison. We cannot, at any rate without a radical change of meaning, substitute for the personal pronoun in these statements either 'my body' or 'my mind'. I cannot say 'My body sees a bird' or 'My mind sees a bird'. Such language does violence to Common Sense, though it may be appropriate to some materialistic or spiritualistic theory. I may indeed say 'My body walks' or 'My body handles a knife'. But if I do so it is because I intend to indicate that it is not I but only my body that is implicated. It is true also that there are cases in which 'I' and 'my body' may be used interchangeably. But when this is so, 'I' has no longer its proper and primary, but only a transferred and derivative meaning. I may say indifferently that 'I' or 'my body' will sometime be mouldering in the grave. But I readily recognise that the dead and buried body will not really be I. I continue to speak of it as 'I' or even as 'my body' only because it is thought of as connected by a continuous history with my present individual experience as an embodied self. The position of Common Sense is that there is no self or mind where there is no individual experience; and that individual experience includes body and mind in one.

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[1] *Med.* VI (tr. Veitch).

In looking at a thing my attention may be almost wholly absorbed by what is seen. But I may also be more or less distinctly aware of myself as looking at it. The self of which I am thus aware as engaged in looking, e.g. at a tree, is certainly not mere mind. It essentially includes my body as I experience it at the moment, and more especially it includes the seeing eye as such.[1]

The self is an embodied self. Both embodied self, as engaged in the process of seeing, and thing seen, as 'external object', enter our total experience in essential correlation and contrast with each other. The thing seen is an external object for me just because it is apprehended as spatially external to my body, and because my body, and especially my eyes as implicated in the process of perceiving, enter essentially into the constitution of my percipient self. We may indeed say 'I see *with* my eyes'. But this means that the eyes are that part of the self as embodied which is specially concerned in seeing, as distinguished, e.g., from hearing or touching. We may say 'I turn my eyes towards this or that object'. But the self which thus moves its own eyes is not apprehended as mere mind acting on mere body. The reference is rather to a more 'inward and central'[1] part of the embodied self[2] from which its action as a whole is initiated. There is a like control and correlation of embodied self and external object in such processes as lifting or trying to lift a weight. The effort which I feel in my body and more especially in my hands belongs integrally to my action; the resisting weight is external object. Even here, when I speak simply of lifting my hand, I do not mean that a pure mind is the agent. I mean that the action which ends in lifting my hand begins in a more inward and central part of my self in its bodily aspect.

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[1] *How* we are aware of the seeing eye or touching skin as such will be discussed elsewhere, especially in Book IV, chap. i.

This distinction between an inner and outer zone of the self is more clearly marked in trains of ideas concerned, not with the immediately present environment, but with what is relatively remote in space and time. In such processes the subject, prompted by emotion and desire, deals by help of images with practical situations which have not yet arisen, but are only future or possible. The self at this stage is still essentially embodied, and as such is contrasted and correlated with a world of external objects and other embodied selves. But the peripheral organs of sense and motion are no longer implicated directly and obviously as they are in actual seeing, handling, running, etc. For the 'sensitive and appetitive' there is substituted an 'imagining and desiring self'. A starving man with nothing to eat may still imagine himself eating and desire to eat, and may devise ways of seeking for food as a preliminary step to satisfying his desire. This imagining and desiring self is certainly not known as pure mind. The natural man tends vaguely to 'locate' it in the region of the midriff, the heart or breast. For it is in this region that we seem to feel desire and such emotions as fear and anger. This inner zone of the self is by no means cut off from the outer zone as something separate. The connexion is retained in two ways. In the first place, the train of ideas is a preparatory stage for direct action in presently perceived situations. It bears the character of a rehearsal for future practical behaviour. In the second place, the central excitement tends to overflow and issue in nascent movements or motor tension of the peripheral organs, which may in part develop into the natural pantomime of gesture language. This tendency is the stronger in proportion to the intensity of desire and emotion. For both these reasons taken together, the inner self is experienced not as something separate, but as a partial embodiment of the self as a whole.

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[1] Dr Ward's phrase: *Principles*, chap. xv. I have followed in the text Ward's account of the stages in the development of self-consciousness, though I differ fundamentally from him as regards the 'pure ego'.

[2] More accurately of the 'embodiment of the self'. The self cannot properly be said to have spatially distinct parts. More on this point shortly.

With the development of conceptual thinking, a still more inward embodiment of the self is recognised. At this stage the controlling interest does not consist in desire for particular and transient objects, but rather in general and comprehensive conative tendencies such as love of money, ambition, self-love, the pursuit of ethical ideals, or the systematic pursuit of knowledge. The urgency of particular desires and emotions is at this level a perturbing influence. What is required is relatively calm and steady thinking, or cool calculation in which words or other symbols tend to take the place of more direct imagery. This rational or thinking self, as we may conveniently call it, is naturally referred to the head rather than to the heart or breast. Its work seems to be experienced as 'head-work' or 'brain-work'. When in ordinary language we speak of abstract thinking as 'brain-work' we are not primarily considering the brain from the standpoint of the physiologist or anatomist. We are rather relying on our own experience in 'hard thinking'. I do not understand how Dr Ward can assert that the 'reasoning self is not commonly regarded as in any way localised'.[1] The ordinary language of daily life bears clear testimony on this point. We speak of a clear or confused, dull or acute head or brain. We speak as naturally of a cool head as of a warm heart. We may say of a statement that it makes our brain reel. We feel the head fresh or fatigued in thinking. Such phrases are by no means merely due to the influence of popular science. Otherwise we should as readily refer to the brain the appetites of hunger and thirst, the emotions of fear and anger, or the sexual passion, as we refer to it the working out of mathematical problems. Dr Ward admits that 'the effort of thinking and concentrating attention...is no doubt referred to the brain'.[2] But he goes on to say that 'this reference is only comparable with the localisation of other efforts in the sense-organs and limbs'. I reply that in this respect there is no difference between the thinking, the sensitive-appetitive, and the desiring-imaginative self. The ground for referring them either to the body as a whole, or more distinctively to special parts of it, is just the localisation of motor effort and of organic sensations.

Ward touches on the really important issue when he proceeds to assert that 'Into thinking and willing as such ...spatial relations do not enter at all'.[3] I would rather say that thinking and willing as such do not themselves enter into spatial relations; and I would say the same of perception and appetite, and of desiring and imagining. Subjective processes, including all forms and phases of feeling, attention and conation, are not themselves extended, do not occupy places, do not stand in relations of position, distance and direction relatively to each other or to anything else. My thinking or seeing is not so localised in my head or eyes as to be spatially separate and distant from my foot or from the table before me or from Timbuctoo. But no such view is implied in the primary awareness of the self as embodied. The term 'localisation' is here applicable only in a derivative and secondary, though a very natural, sense. For Common Sense, thinking and willing as well as desiring and imagining include in inseparable unity what reflective analysis comes to distinguish as bodily and mental factors. Though one of the factors, the bodily, is spatial, their unity is not experienced as a spatial unity.[1] The so-called 'localisation' of the self in the body, and distinctively in different parts of the body, is, strictly speaking, not a localisation of the mind or its functions, but only of its experienced embodiment. But, owing to the fundamental unity of the bodily and mental aspects, it is natural to speak, in a derivative and secondary sense, of the whole subjective process as localised either in the body generally, or distinctively in a special part of it. In this derivative sense, all subjective processes may be said to be localised. It is indeed utterly repugnant to Common Sense to regard mere body as attending or feeling or willing. But the view that attending, feeling and willing are functions of a pure or transcendental Ego is almost equally strange to it. Both materialism and pure spiritualism are metaphysical theories which have no support in common experience.

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[1] *Principles*, p. 370. [2] *Ibid.* [3] *Ibid.*

This account of the view of Common Sense is strongly confirmed by the belief current in all ages in 'souls' or 'spirits' or 'ghosts' separable from the ordinary body of waking life, e.g. in dreams or after death. Such souls are very far from being pure minds, like the *res cogitans* of Descartes. So far as they are selves at all, they are embodied selves. It makes no difference that the embodiment is so attenuated or rarefied as in general to evade ordinary sense-perception, or that it is regarded, for the most part, as very imperfect compared with the body of daily life. It still is a body, and yet not mere body any more than mere mind. 'These ghostly reflections and emanations are not materialistic in the sense in which "matter" is contrasted by philosophers with "mind".'[2] Just as little are they spiritualistic, if by spirit we mean mind as contrasted by philosophers with matter. A purely immaterial soul, capable of existing apart from any sort of embodiment, is a conception due to the professional metaphysician, alien and, I venture to say, really unintelligible to the Common Sense of mankind in all stages of human culture.

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[1] What its nature is Common Sense does not inquire, until the question is thrust on it by science or philosophy.

[2] John Laird, *Our Minds and their Bodies*, p. 8.

4. *Is Common Sense Right?*

In expounding I have also in part defended the Common-Sense view of the self as embodied. But further examination is required before we can feel safe in accepting it. Further treatment of this question is reserved for Book IV, more especially in the first chapter, where I also attempt to show that the awareness of the embodied self in self-consciousness is essentially inseparable from the awareness of external objects.

BOOK THREE

KNOWLEDGE OF PHYSICAL EXISTENCE—HISTORICAL AND CRITICAL

Chapter I

TYPICAL THEORIES

1. *Classification of main Types of Theory*

There is one principle common to nearly all theories[1] of the way in which we know physical existence. They take for granted that such knowledge must be founded on what we actually or immediately experience, as we experience pain or pleasure while feeling it, or a sensum while sensating it. This assumption I myself accept. But in accepting it I insist on distinguishing it from another very frequently confused with it, which, as will appear in the sequel, I decidedly reject. I refer to the assumption that actual existence which is not thus actually experienced can only be known by inference, and not immediately.

The principle that our knowledge of the physical world, whether immediate or inferential, is at least essentially conditioned by what is primarily given *in* and not merely *through* actual experience supplies a useful clue in classifying various types of theory. We may distinguish them according to the sort of experience which they regard as essentially relevant, and according to the way in which they suppose this to be connected with the knowledge of physical existence. We may, from this point of view, broadly mark off: (1) Idea-Theories (Descartes and Locke); (2) Sensation-

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[1] At least the theories of those philosophers who do not merely accept the perception of physical existence as an ultimate fact, but consider some sort of explanation or analysis of it necessary.

Theories (Berkeley and Mill); (3) Activity-Theories (Maine de Biran, Bain and Ward); (4) Appearance-Theories (Ward).

2. *Idea-Theories*

The only actual experience supposed to exist, or at least taken into account, by exponents of idea-theories, is the process of thinking. But to think is to think of something and what is thus thought of is called an idea. To quote Locke, 'An idea is the object of the understanding when a man thinks'. It is essentially characteristic of all such theories, and the main source of trouble for them, that they regard what is thus present to thought as having no existence distinct from that of the process of thinking. Consciousness of the process of thinking is taken to involve immediate knowledge of the thinking being which each of us calls 'I'. But whether or not anything else really exists, more or less resembling or conforming to our ideas, is a question which can only be answered by inference from the existence of ideas considered merely as contents of thought.[1]

3. *Sensation-Theories*

These take their start in what is actually experienced in sensation: this is regarded as itself actually existing and not as mere content of thought—not as an idea in the sense of Descartes and Locke. The immediate content of sense-experience thus regarded as real in and for itself is all that we can immediately know of a physical world. Any attempt to pass by way of inference from our sensations to a world of things causing them and more or less resembling them is given up as hopeless. Even if such a world existed, we could have no good reason for asserting its existence. On the other hand, sensa as actually experienced by individuals do not by themselves suffice to constitute, or to yield a satisfactory substitute for, the physical world presupposed by Common Sense and science. There must be thought which transcends actual experience. At this point there are two alternatives for sensationalism.

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[1] This is logically the position to which even Locke is reduced, though he is very impatient of it and tries to cut the knot instead of untying it.

(1) The first, which is familiar to us in Berkeley and Mill, is a form of 'subjective idealism' or 'mentalism'. It proceeds on the assumption that sensa are existences which begin, continue and cease with the actual experience of them by individuals, and are in this sense mental. This is the point emphasised by Berkeley when he says that 'they can exist only in a mind'.[1] What then becomes of the permanence of the physical world and its independence of the course of individual experience? There can be only one answer to this question—the answer given implicitly by Berkeley and clearly formulated by Mill. What is independent of the individual is the order in which sensa occur; the physical world is conceived as consisting in a regular order of actual and possible sensations, an order determined *for* the individual and not *by* him. In what way is this order known to us? Only by thought, which goes immensely beyond the actual sense-experience of the moment. After having had actual sensations we are able to *think* of possible sensations. We are also able to infer that we shall have, or under certain conditions may have, might have had, or might now be having, sensations which we are not experiencing and perhaps never will actually experience. In the long run the basis of such inference is merely the customary conjunction of actual sensa in the past history of the individual, generating the expectation of similar conjunctions which have not actually occurred. The inference is not, however, merely from actual to possible experience, though this is always the foundation on which it is ultimately based. It includes also inference from possibilities of sensation to other possibilities of sensation. Indeed the physical world of Common Sense and science consists, on this view, mainly in a prodigious system of possibilities thus inferable from each other, of which only

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[1] He does not call them mental. For him they are not mental but material.

a relatively small part is realised in individual experience. Now, since possibilities as such and their correlation cannot be actually experienced but only thought of, the physical world for this type of theory consists mainly in a system of ideas.

(2) In this respect it is sharply contrasted with the new form of sensationalism which has been called Neo-Realism, and may perhaps be more accurately called Sensational-Realism. But the old and the new doctrines are so far realistic that they agree in regarding the content of actual sensation as real in itself, and not as an ideal representation of something else which may or may not really exist. The new theory, however, differs fundamentally from the old in ascribing to sensa the sort of permanence and the independence of individual experience which is ordinarily ascribed to physical things. For Mill and Berkeley the distinction between sensation and sensum is without significance, and is in fact ignored by them. It is, on the contrary, all important for the New Realists as represented, for example, by Mr Alexander. Their fundamental postulate is that though the sensum exists *as such* only in being sensibly experienced by individuals, it has an independent being and history of its own, within which its occurrence in sense-experience is a passing episode. This independent being is its existence as part of the physical world. The actual sense-experience of individuals is figured as a sort of stage on which physical existences have their entrances and exits, like actors coming before the footlights and again retiring behind the scenes. Proceeding on this assumption it may well seem possible, *primâ facie*, to give a simple and straightforward account both of the nature of the physical world and the way in which we know it. Physical existence is primarily known as actually given in sensation, and as thus known it is independent of the experience in which it is revealed, and has the primary and secondary qualities which Common Sense ascribes to the physical object. It is true that only part, and relatively a very small

part, of the physical world is thus directly disclosed in detail to the individual. What we know or believe beyond this must rest on inference. But this difficulty is common to all possible theories. What the Neo-Realist may claim is that he is in a better position to meet it than others. The general character of the content of sense-experience supplies an initial clue to the general nature of the whole as a spatio-temporal system.[1] Further, the detailed data are really relevant to the inferences based on them; they are so because they are themselves physical facts and not representative ideas or *mere* sensa existing only in a mind.

If this apparently simple and easy scheme is true, and if, as its advocates maintain, it is consonant with the unsophisticated view of Common Sense, why, we may ask, has anyone ever held any other? There must be very serious, if not insuperable, objections to it. The fact is that as soon as we begin to work it out in detail we find ourselves in a tangled maze. One obvious difficulty, though by no means the only one, is recognised by the Neo-Realists themselves. Physical objects, as they exist independently of individual experience, admittedly differ in manifold ways qualitatively and quantitatively from what are supposed to be the same physical objects as actually experienced, i.e. as sensa; further, there are manifold sensible apparitions of what is taken to be one and the same physical fact. Mr Alexander has made a monumental effort to grapple with this difficulty. Whether he has succeeded or not, we may at least assert that the theory from which he starts loses in the process all claim to be regarded as simple and obvious; on the contrary, it becomes in a high degree laboured, complicated and sophisticated. This suggests that the sensational Realist does not in fact start, as he seems to assume, from the basis of Common Sense, but from some illegitimate theoretical assumption.

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[1] Alexander's insistence on this point seems to me perhaps the most valuable part of his work.

4. *Activity-Theories*

In making this a separate division it is necessary so to define it as to avoid overlapping with the other types of theory. For all of these may attach great importance to what the individual experiences in being active and passive, in doing and undergoing. This is true, for instance, of Berkeley, who was a Sensationalist, and of Leibniz, who follows the Cartesian tradition. Of Leibniz I shall presently have occasion to speak in dealing with Appearance-Theories.

Berkeley, though he regards the physical world as nothing but an order of actual and possible sensations, yet makes it an essential part of his system that both the sensations and their order shall be referred to a Cause beyond themselves. He finds the only possible clue both to the existence and nature of this Cause in the contrast between our felt passivity in receiving sense-impressions and our active initiative in remembering, imagining, etc. The passivity is taken to imply a correlative agency other than our own, but conceivable only through the analogy of our own. Hence Berkeley insists that the cause of our sensations and their regular order must be a mind: which, as being the author of nature, he identifies with God.

If we are to avoid cross-division, an Activity-Theory must be defined as follows. It must assert that we know an independent physical world really and not only apparently qualified by at least the primary qualities of matter. It must deny that our knowledge of this world can be accounted for by reference to sense-experience alone. It must hold that what mere sense cannot yield is supplied by what we ourselves originally and immediately experience in being active and passive in relation to a not-self.

Historically this line of thought originates with Maine de Biran and the French Ideologists, e.g. de Stutt de Tracy, who influenced Thomas Brown and through him Bain and Herbert Spencer. The experience on which they almost exclusively insist is that of motor effort against resistance. What thus resists voluntary effort must be an independently existing not-self. An 'object' is for them primarily an obstacle.

If this view is to be taken seriously, further explanation is required. It is plain that by itself it cannot claim, without an obvious *petitio principii*, to be an account of the way in which physical objects are known. Awareness of an embodied self in interaction with an embodied not-self is already presupposed in the awareness of resisted effort. All that can be intelligibly claimed by an Activity-Theory is that we can primarily apprehend neither the self as embodied nor bodies outside it except in being aware of them as active and passive in relation to each other—except in being aware of them as engaged in what Ward calls a common 'transaction'. It follows that the experience of being active, however essential it may be, cannot be sufficient. It must be taken in inseparable union with sensation. Only sense-experience yields a clue to the material as distinct from the dynamic aspect of physical existence. But if both factors, sense and self-activity, are indispensable to any knowledge of an independent physical world, they must not be regarded as contributing to this result independently, but jointly in essential unity with each other. It ought to be shown how and why they coalesce.

Another point which requires to be cleared up is the sense in which it is asserted that we have a primary awareness of our own activity and correlative passivity. What the sensationalist means when he affirms that we are primarily aware of our own sensa is that they are actually experienced. It may be and has been maintained, e.g. by Leibniz, that the individual's activity and passivity fall entirely within his own actual experience. But this is possible only if we hold with Leibniz that action and passion fall entirely within the closed circle of the individual's own being[1] and life-history, so that the existence or non-existence of any other finite being makes no difference. If I were the only being in the universe except God, I might and would on this view still have the experience of motor effort against resistance.

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[1] His own being considered merely as a mind and not as an embodied mind.

Hardly anyone would now regard such a position as tenable. But whether tenable or not, the point which concerns us is that it is flatly incompatible with the part assigned to the primary awareness of self-activity as conditioning knowledge of an independent physical world. For this it is necessary that we should be primarily aware of being active and passive, as embodied selves, in relation to an independently existing not-self which is correspondingly active and passive in relation to us. What we are cognisant of must therefore include what we do not actually experience, i.e. the not-self and our own bodies in relation to it as partners in a common transaction. What the advocates of the Activity-Theory must regard as falling within actual experience is not the whole transaction but an essential ingredient in it, that which alone gives it the character of an active process. He must maintain that his actual experience is such that it cannot exist or be apprehended by itself but only as part of a complex situation, which transcends actual experience.

5. *Appearance-Theories*

The distinction between things as they are in themselves and things as they appear to us is familiar in the history of philosophy. I have here to consider a special application of it in which it is confined to a distinction between the nature of the independently existing physical world as it is in itself and the same world as it appears to us owing to the fact that we are sentient beings. In itself it is not regarded as physical; its real nature is supposed to be discoverable only by philosophical reflection: it appears to us as qualified by such physical characters as extension and motion, not to mention the secondary qualities, only because and so far as we know it by way of sense-experience.

This view arose first and most naturally as a development of the doctrine of representative ideas, and may be best explained by the transition from Descartes to Leibniz. The germ of it is to be found in the Cartesian scepticism concerning the testimony of the senses. Ideas which are sense-bound and sense-conditioned cannot represent the physical world as it really is in itself: for they vary with conditions of perception, and in general with the fluctuating conditions of our finite existence, independently of the nature of the things which we suppose ourselves to see or touch. Hence the idea, for example, of the sun which we have through sense-perception cannot represent the sun as it really is; and the same deceptiveness extends in principle to all ideas which come by way of sense, though in ordinary life we do not notice that we are deceived, unless we find ourselves practically misled.

How can we know that our senses deceive us? This is possible, according to Descartes, only because we have another source of knowledge in what he calls innate ideas. To have ideas is to think. We are thinking beings by our original nature. Sense-experience is only the way in which the content of thought is determined and, in being determined, is limited and modified by the transient and accidental circumstances of our finite existence. The thinking process is capable of an independent development as pure thought freed from the trammels of sense. The ideal contents of pure thought are what Descartes calls innate ideas —ideas due to the fact that we are thinking beings at all, apart from the particular conditions of our finite history, and more especially the connexion of the mind with a body. Innate ideas are contrasted as clear and distinct with the adventitious and factitious ideas of sense and imagination as obscure and confused.

Among the ideal contents of pure thought is included the idea of a physical world, as characterised only by extension and its modes, shape, size, relative position and motion. It is this clear and distinct idea which enables the mathematician, independently of empirical data, to apprehend the general system of geometrically possible figures, and freely to construct them in detail. It is from this idea that the physicist starts in framing hypotheses to explain the data of observation and experiment, to connect these data with each other in a coherent system, and in so doing to correct the illusions of sense. It is true that the presence of this idea does not in itself imply the real existence of anything agreeing with it. None the less, if the physical world does exist, it must exist as we clearly and distinctly conceive it, and not as it appears in sense-perception and sensuous imagination. As it is in itself, its whole nature must consist in extension, to the exclusion of secondary qualities and animistic predicates. But it is still, on the Cartesian view, distinctively physical in its intrinsic nature. It is the physical world, not indeed of Common Sense, but of the exact science which is applied mathematics. To Leibniz this seemed an impossible position. He cogently argues that the kind of self-subsistence ascribed to matter is incompatible with the view that its one fundamental attribute is extension. This would mean that the whole nature of the material substances would consist in their mutual externality to each other. They would have no intrinsic nature of their own to which we could ascribe self-subsistence. What is self-subsistent, as Descartes conceived his extended substance to be, is a self or something essentially analogous to a self. We know what we mean by substance only because we ourselves are substances. The animism which Descartes utterly rejects becomes for Leibniz the only possible clue to the nature of the physical world as it is in itself. The ultimate unities of which it is composed are what he calls *monads*, i.e. experiencing individuals differing immensely in the relative clearness or confusedness of their ideal representations, and so falling into broadly marked classes corresponding to the phenomenal distinction between inorganic matter, plants, animals and human beings.

What appears to sense-bound and therefore confused thought as extension and relative position and motion is really the relative order of monads, which is not and cannot be in any ordinary sense spatial. Neither can it, according to Leibniz, be causal. For the monads, being indivisible unities, cannot have parts which interpenetrate or meet on a common boundary, and cannot therefore interact. Each of them is essentially active in striving towards greater clearness and distinctness; each is passive inasmuch as its activity is limited and conditioned by the law of its own being. But both activity and passivity are purely immanent, and both fall within the monad itself—they do not causally affect anything else. The only possible relation of monads to each other is founded in their own nature. It consists in representing by way of ideas the whole of which they are members, or in the lower forms of being by some rudimentary analogue of ideas. Each in its own unique way throughout the varying stages of its life-history represents or 'reflects' the whole system of which it is a member. It is correspondence of this kind which is phenomenally apprehended as spatial relation and change of spatial relation within an extended world. Coincidently, activity and passivity confusedly appear as physical force and inertia.

After Leibniz the chief exponents of Monadism are Lotze and James Ward. Both differ from their predecessor in ascribing real interaction to the monads. Lotze is able to do this only by virtually giving up the independent individuality of the monads. Ward, on the contrary, is especially interesting to us because he makes the possibility of interaction depend on a peculiar view of sense-appearance which for him takes the place of the Cartesian-Leibnizian doctrine of representative ideas. Logically, though not historically, the relation of Ward to Neo-Realism is here analogous to the relation of Leibniz to Descartes. The Neo-Realist holds that when we see a star the star itself becomes in one aspect of its being an immediate content of our actual sense-experience. But he has to admit that the star as thus actually experienced differs immensely from the star as it really is. None the less he assumes that the star as it is in itself and the star as it sensibly appears must be so far alike in their general nature as to be characterised by the primary and even the secondary qualities of matter. Both have extension, relative position and brightness, etc. But if we once admit a difference between things as they are in themselves and the same things as sensibly experienced, it seems arbitrary to confine the difference within those limits. All that is required is thoroughgoing correspondence, and this requirement may be fulfilled by a monadistic theory. Ward's position is that what in itself is an ordered system of experiencing individuals or monads is directly present to us and to each other in actual sense-experience as material phenomena. But in being sensibly experienced, it appears fundamentally different from what it really is. It presents itself, not as a system of monads, but as a material world. From this point of view, the difficulty about causal relations which troubled Leibniz and Lotze disappears for Ward. The monads can interact inasmuch as they are existentially present to each other. Their sensible appearance is not a *tertium quid* intervening between them, it is themselves actually appearing—though in disguise. Hence in dealing with the appearance we are dealing with things as they are in themselves. My bodily transactions with my bodily environment are phenomenal counterparts of what are really the transactions between myself and other monads.

Ward finds himself confronted with two further problems which he takes very seriously. In the first place he has to account for the distinction within the phenomenal world itself between what is and what only seems to be, between objective phenomena and their subjective appearance. The sun as conceived by the astronomer and as we see it in the sky are both equally phenomenal. Both have the characters of extension, shape, motion, etc., which belong to things as they sensibly appear and not as they are in themselves. The same is true of the 'real' straightness of the partially immersed oar and the seeming bend in it, and of the seeming continuity and quiescence of the water of a pond and the scientific view of it as consisting of molecules in incessant agitation. How are we to account for this distinction between deceptive appearance and appearance which is objectively valid? In particular, why are the results reached by inference preferred to what is given in immediate experience? According to Ward there is no possible solution of this problem so long as we consider the single individual apart from social relations. For the individual thus isolated all appearance would be equally real. But 'intersubjective intercourse' involves mutual understanding and practical co-operation in the pursuit of common ends. This is possible only by ignoring or rejecting what is private to the several members of the community, and selecting those features of the experience of each individual which are found to agree with, or can be regularly correlated with what is experienced by the others. The phenomenal world is objective inasmuch as it can be thus shared by the community. Objective phenomena are public phenomena. On the other hand what cannot thus enter into the public stock is merely subjective appearance. The criterion of phenomenal reality is society. Hence arises the natural but fallacious belief that socially objective phenomena, in their phenomenal character, exist in themselves independently of sense-experience. Independence of the several members of the community taken severally is confused with independence of the community as a whole. It is as if one should assume, because the presence of no single member is necessary to constitute a meeting of the House of Commons, that therefore there could be a meeting at which no members are present.

Ward's second problem is to show how we can pass from what we initially apprehend as material phenomena to a well-founded theory of their nature as they are in themselves, i.e. a system of monads. If I understand him aright, the rudimentary germ of this view is to be traced back to the vague animism or 'projection of the self' through which, for example, in motor effort we apprehend the resisting object as making an effort which is the counterpart of our own. But it is the intersubjective intercourse of man with his fellows in society which develops and defines this vague animism, and finally leads up to monadism as a philosophical theory. A social community is constituted by the mutual understanding and intentional co-operation and conflict of its members. But social communism only makes manifest at a higher level the general constitution of what sensibly appears as a material world. As it is in itself, this consists of experiencing individuals who do blindly what the members of a society do wittingly. Each blindly strives towards its own self-maintenance and self-betterment; but each in so striving has to adjust itself through trial and failure to the others with which it is in incessant interaction within the whole order of which it is a part. There thus arise relatively fixed and regular modes of adjustment. What we call the uniform order of nature, so far as this is really found, is the phenomenal counterpart of such habitual routine.

How can what is really a system of monads be immediately experienced as a material world? To this question Ward gives no answer and no answer seems possible. This being so, his peculiar version of monadism is untenable.

Chapter II

THE KANTIAN VIEW

1. *Kant's New Statement of the Question*

Kant holds that his predecessors, in dealing with the way in which we know external objects, have all proceeded on a fundamentally false assumption which leads them to state the question at issue wrongly, so as to preclude the possibility of any tenable answer. He agrees with them indeed that what is at issue is the way we know bodies in space as existing, persisting, changing and interacting independently of what occurs in these particular streams of events which constitute the life-history of individual minds. An individual mind considered as having a temporal history in which sensation, ideas, feeling, etc., succeed each other in incessant flux is what Kant calls an 'empirical self', to distinguish it from a supposed 'transcendental self'. The question for Kant, as for Locke and Descartes, is: How can we know the world of bodies in space as existing, changing, etc., independently of the 'empirical self'? But he differs from them in identifying these independently real bodies with the phenomena presented to our experience. He identifies the 'external' world with the world as it appears to Common Sense and science by way of sense-perception and of the thought which correlates perceptual data in a system. Our primary knowledge of physical existence is thus, according to him, not inferential but immediate. His precursors, on the contrary, had taken for granted that this phenomenal system could consist only of ideas (Descartes and Locke), or of sensation (Berkeley and Hume), falling within the private existence of the empirical self. It followed for them that if an external world really exists in independence of the empirical self, this cannot be the obvious world which we know through experience. The independently real world, if it exists at all, can exist only as a more or less faithful duplicate of the phenomenal. It may resemble or correspond to the phenomenal; it may cause it by acting on the empirical self; but it cannot be identical with it. In Kantian language, the physical, external or objective world is regarded by them not as a phenomenon but as a 'thing-in-itself'.

Like Berkeley before him, Kant maintains that so regarded it cannot be known to us, directly or by inference, and even that it cannot exist. On the other hand, he is in principle opposed to the Berkeleyan contention that because physical objects are phenomena they must be reducible to an order of actual and possible sensations, and that consequently 'all those bodies which compose the mighty frame of the world have not any subsistence without a mind'.[1] On this view to subsist within a mind is to be comprehended within or to be dependent on the empirical self. Kant starts from the obvious fact that things in space as known to us through experience have an existence of their own co-ordinate with and not enclosed in or dependent on that of empirical selves. An empirical self is known as (in Kantian language) one phenomenon among others, distinguished from and correlated with the others, and more especially with bodies in space. To isolate it from this context and know it by itself in the only way we can know it, i.e. by experience, is a sheer impossibility. Hence it follows negatively that we cannot, like Descartes, make it an independent jumping-off place for inferring the existence of the spatial world, or, like Berkeley, find the spatial world within it. The ground is cut off from beneath the feet both of 'problematic' and 'dogmatic' idealism. Positively it follows that if the empirical self is real, which no one can doubt, the whole context of phenomena of which it forms part must be real. Consequently bodies in space are real. That they are phenomena is in no way incompatible with this position. For, in Kantian language, to be a phenomenon is to be known or knowable through experience, in distinction from a thing-in-itself which is supposed to be beyond the range of any possible experience.

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[1] *Principles*, § 6.

In principle and intention the above is the distinctive doctrine of Kant's critical philosophy, and constitutes what he calls a Copernican change of standpoint. But it has been clearly shown by Kantian scholars that it was only by degrees and haltingly that he came to realise fully and consistently the implications of his own position.[1] There are many passages in the *Critique* which excuse though they do not justify the accusation, as he felt it to be, of subjective idealism brought against him by his contemporaries and others.

In particular he has difficulty in finally ridding himself of the Leibnizian distinction between appearances and things-in-themselves. For Leibniz, and in general for what I have called appearance-theories, this was a distinction between things as they really are and the same things as they seem to us, but really are not. In the distinctively critical doctrine, it is a distinction between what is and what is not knowable through experience; and what is known through experience is held to be real and not mere seeming. Yet the Leibnizian view can be traced, if Kemp Smith is right, in the passages dealing with the Transcendental Object, and it certainly pervades the whole treatment of Freedom in the *Dialectic*, in a way which is quite incompatible with the reality which he elsewhere ascribes to the empirical self and consequently to the phenomenal world in general.

2. *The Kantian* A Priori

That we do know the physical world and our empirical selves as phenomena and only as phenomena—i.e. through experience—is taken by Kant as a basic fact from which all further inquiry must start. The only question is: How?

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[1] Kemp Smith, *Commentary on Kant's Critique, passim.*

Whatever factors or conditions may be found indispensable to constitute objects capable of being known, or to constitute a subject capable of knowing them, must for that reason be simply accepted with what Mr Alexander would call 'natural piety'. Such factors or conditions are *a priori* in the distinctive meaning which that term bears in the critical philosophy. They are neither known through experience nor independently of it, but as involved in the possibility of it. They are not themselves phenomena: but without them there could be no phenomena. From the side of the object the first general *a priori* requirement is that the phenomenal world shall consist through and through of differences connected with each other within an ordered unity. Neither the differences apart from the unity nor the unity apart from the differences are knowable at all; it is only through reflective analysis that both are seen to be essential to objects of experience. Hence it follows that Locke and Berkeley are engaged in a hopeless enterprise when they start with supposed simple data each capable of being known independently by itself, and then attempt to show that the world, as it appears to us, is built up from these, either by the work of the mind in 'compounding' and 'comparing', or by customary association.

To this *a priori* condition on the objective side there corresponds another, both implied by it and implying it, on the side of the knowing subject. This is what Kant calls the 'unity of apperception' or of self-consciousness. Knowledge is possible only if the knowing subject throughout the diversity of its objects is capable of thinking of itself as the same 'I' which is cognisant of *a* and also cognisant of *b*. But this again cannot be so, if the cognisance of *a* and that of *b* are each entirely separate from each other. There is no unity of apperception unless *a* is apprehended as in some way related to *b* within the unity of a whole. The identity of the 'I' of self-consciousness implies unity of the world which it knows. Inversely, the unity of the world as known implies in its turn the identity of the knower. In order that *a* may be apprehended as related to *b*, the same 'I' must be cognisant at once of both *a* and *b*.

The next step is to distinguish various ultimate forms of objective unity or 'Categories' corresponding, on the side of the subject, to the various ultimate ways in which the 'I' may be conscious of its own identity. To apprehend differences as connected with each other within a unity is to judge. But the science of logic distinguishes ultimate forms of judgment irreducible to each other. The forms of judgment yield a clue to corresponding ultimate forms of objective unity in the phenomenal world (Categories) and at the same time to various ways of being self-conscious. '*x* is *y*' is the form of the Categorical judgment, 'if *x* then *y*' that of the Hypothetical, 'either *x* or *y*' that of the Disjunctive. These are not themselves judgments, but mere forms of judgment. In them nothing is asserted or denied, and nothing is expressed which can be regarded as capable of being asserted or denied. There is only the bare thought of a certain sort of relation without any specification of the related terms, and without even the most general clue to determine how they might be specified. There is no answer to the question: What are *x* and *y*? There is nothing to determine, even in the most general way, the direction in which an answer may be sought. Such pure concepts of the understanding are not knowledge at all either of phenomena or, as Descartes and Leibniz supposed, of things as they are in themselves. To constitute judgment, and therefore knowledge, it is indispensable that *x* and *y* shall not be absolutely variable, but shall, at least as regards their general nature, be in some way specified; and the only way in which they can be specified is through the diversity presented in sense-experience. But they must not be so specified as to limit them to this or that special phenomenon or group of a special class of phenomena. Otherwise they would not be Categories, i.e. general rules or principles entering universally into the essential constitution of the phenomenal world or, in other words, indispensable to any possible knowledge through experience. To constitute a Category, the entirely indeterminate *x* and *y* of the pure concept must be determined through certain general characters of the content of sense-experience, however this may vary in detail.

It follows as an *a priori* condition that there must be such universal characters of the sense-given manifold. There must be *a priori* forms of sensibility as well as of thought. These, according to Kant, are Space and Time. Whatever may be the diversity of particular details entering into the unity of a phenomenal object, or the diversity of objects related within the unity of the phenomenal world, it must always be a spatial or temporal diversity or both together. The empirical self is merely temporal—a succession of events. For this reason it is only indirectly that the categories are applicable to it. The category of substance, for instance, as the enduring identity of what changes, throughout the successive phases of the change, holds primarily only for motion in space. The empirical self, abstractly considered, is only a successive flux without the permanence which is essential to change. Only through its relations to the permanent in space can it be apprehended as having a persistent identity and be known as a phenomenon. If we abstract from its relation to things in space we have left only the subjective sequence of our own sensations, feeling, etc. But it is a mistake to suppose that merely subjective sequence can be independently known by itself.

3. *The Transcendental Self*

So far I have found myself in agreement with the main drift of the Kantian theory of knowledge. But I have now to take up two cardinal doctrines, which seem to me so untenable in principle that in expounding them I am bound to blend exposition with polemic. I refer (1) to the distinction between the Empirical and the Transcendental Self, and (2) to the theory of *a priori* Synthesis.

We have seen that Kant insists on regarding what he calls the empirical self as merely one phenomenon among others, distinguished from others not as being more but as being less directly knowable. Its most distinctive feature is that it is merely temporal and not spatial.

Kant here finds himself confronted with the question: How can what is merely one small stream of events within the boundless immensity of the spatio-temporal universe be cognisant of the whole, and of itself as one small part of the whole? There were two alternative courses open to him. He might have simply accepted as basic fact that the self which we know through experience as having a history in time, being born and dying, sleeping and waking, remembering and forgetting, is also the knowing subject to which is presented the world of phenomena, including its own transient and fluctuating existence. The critical problem would then be to point out the *a priori* conditions required to make this possible. If he had proceeded in this way he would have been driven radically to revise his conception of the empirical self as merely one series of events among others, differing from the others merely in being temporal and not spatial. But this conception of the empirical self is for Kant apparently fixed and final. Hence he is driven to fall back on the second alternative. As the empirical self is not the knower but only something known, there must be another self which knows. This is what he calls the 'transcendental self' or 'pure ego'. As the knowing subject in all possible knowledge through experience, it cannot itself be known through experience, i.e. it cannot be known at all. It is the 'I' which is thought of as one and the same throughout the variety of successive and simultaneous phenomena apprehended by it. But this unity of apperception, though an *a priori* condition of knowledge, is not itself knowledge. Like the pure concepts of the understanding, it is a mere thought entirely empty of content. It is a mere self-sameness excluding even the diversity of succession and duration in time. To treat it as more than this, i.e. to regard it as a substance enduring through and including the diversity of its successive states and relations, or as causally related to objects in space, is to fall, according to Kant, into the maze of fallacies which he calls 'Paralogisms of Pure Reason'.

Does Kant really mean that there are two selves, or only the same self considered from two points of view? The truth is that he is here between Scylla and Charybdis, and escapes neither. He originally starts from the Leibnizian conception of the distinction of things as they are in themselves and their sensible appearance. He differs profoundly from Leibniz in holding that even our own empirical selves are knowable only as sensible appearances and not as they are *per se*. The very sense in which Leibniz explicitly maintains that what Kant calls the empirical self is not a phenomenon, but a thing-in-itself, is that in which Kant originally asserts that it is not a thing-in-itself, but a phenomenon. Before he had fully realised the implications of his own philosophy, what he asserted was that the self which each of us knows through experience is not the self as it really is, but only as it seems to be but really is not. What seems to us to be a sequence of sensations, feelings, etc. (the Empirical Ego) is really nothing of the kind; it really consists in timeless determinations of a timeless self, which is unknown (the Transcendental Ego). Thus even if we insist that knowing and willing inevitably *appear* to us as temporal processes within the life-history of the individual, it does not follow that they really are so; for the appearance is mere appearance. This is the explicit teaching, for example, of the *Aesthetic*[1] and of that early written portion of the *Dialectic* which treats of Free Will and Necessity.[2]

So long and so far as Kant abides by this view of phenomena, all that he can consistently mean by calling them 'empirically real' is that they are well-grounded appearances, inasmuch as they *correspond* to the unknowable nature of things as they are in themselves. As regards bodies in space, and space itself, this was no new doctrine, except for the denial of any possibility of discovering the real nature of what sensibly appears to us as spatially extended. What was novel and startling and incredible to Kant's contemporaries was the assertion that the experiencing individual, with his life-history in time, is in this sense a mere appearance of a hidden reality.

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[1] Cf. especially the 'Elucidation', 2nd ed. pp. 53–8.

[2] Cf. especially the distinction of the 'intelligible character' and the 'empirical character', 2nd ed. pp. 566 sq. Cf. also pp. 521 sq.

In the end this doctrine is virtually abandoned by Kant himself. With the more mature development of his Critical Philosophy, he reaches a radically different view of the distinction between phenomena and things-in-themselves. It is no longer a distinction between the thing as it is *per se* and the same thing as it appears to us but really is not. It is rather a distinction between what we can and what we cannot know through experience. What we know through experience is taken really to exist on its own account and not merely as the appearance of an unknowable something behind it which it screens from our view.

The contrast of the later with the older position is signally illustrated by the Refutation of Idealism in the second edition of the *Critique*. Here it is taken for granted as undeniable that the empirical self *as such* really exists. The hinge on which the argument turns is that inasmuch as the empirical self can only be known as essentially related to things in space within the whole context of the phenomenal world, things in space must also be real as such.

From this standpoint the only reason for assuming things-in-themselves at all is that what we know through experience cannot be all that really is. The spatio-temporal world, if we attempt to conceive it as self-complete and self-contained, is seen to involve those contradictions which Kant calls antinomies. There must be something beyond it, unknown to us, which is required to complete it. What is thus required to round off the world of our experience and to make it a self-consistent whole is the region of things-in-themselves.

The concept of the thing-in-itself is thus the concept of a limit to phenomenal knowledge. How, then, from this properly critical standpoint, are we to regard the doctrine of the transcendental self which is timeless? The question is: Granting that the empirical self with its temporal history is *as such* real, can we still deny that it is the willing and knowing subject? It may be freely admitted that the relation, if we may call it a relation, of knowing to what is known is not itself temporal. Hence we may suppose, at least as a problematic conception, a subject whose knowledge is eternally complete, who does not attend now to this and now to that, who does not pass from relative ignorance through trial and failure to fuller knowledge, who does not make mistakes and afterwards correct them. But such a subject would be God and not ourselves. Its knowledge would not be the only knowledge with which, following Kant, we are here concerned, i.e. knowledge through experience. The self which knows through experience must *quâ* knower comprehend change and succession within its individual identity. It is in reality this self, and not a pure Ego, which is identified as the same in the Unity of Apperception. It is identified as the same throughout the successive stages comprehended in its life-history: but this is nonsense unless it has a life-history. The 'I am' cannot therefore be the empty thought of bare identity without temporal or other diversity. It cannot be a purely analytic judgment, as Kant supposes. On the contrary it is intensely synthetic.

What can be said for the opposite view, for which Kant stands? The main argument seems to be that inasmuch as the apprehension of temporal succession is not itself successive, a changing self cannot be cognisant of change. I fully admit that in being cognisant of *b* as succeeding *a*, there must be awareness of both *a* and *b* at once and not successively. I admit also that this makes it possible to conceive that there may be a subject which knows all change and succession without any change or succession in his own being. But it is merely puzzle-headed to put this forward as an argument for the inverse conclusion, that change cannot be known at all except by a changeless self. It will be sufficient to remark that though in knowing *a* as followed by *b* we must be cognisant of both at once, yet we may know *a* before we know that it is followed by *b*. We can know that we are firing a pistol or have fired a pistol before knowing that this occurrence has been followed by the death of a man.

It is hardly necessary to add that, on the practical side, the self which wills and is, in any tenable sense, capable of willing freely, is just the same self which strives towards its ends and ideals and finds, as Hobbes says, 'no content except in proceeding'.

This conclusion is certainly startling. What in the boundless immensity of temporal process appears only as a vanishingly brief and transient episode, what is related to the boundless immensity of the spatial universe only through the body which belongs to it as an embodied self, is yet capable of apprehending this spatio-temporal immensity as such, and itself as conditioned within it, is capable of exploring in endless progression the partial features and aspects of what it thus apprehends indeterminately, and of seeing that the progression, however far it advances, can never reach finality, but must be endless. Nor does the wonder end here. This limited and transient being is capable of finding reasons for denying or doubting that the spatio-temporal universe can be the whole of reality; that it can subsist by itself as self-contained and self-complete. He thus comes by the thought of what is required to complete and account for it, the thought of eternal being in which is no change or succession, of indivisible being not composed of parts. He is capable of transcending in thought the region of spatial and temporal phenomena, and conceiving this spatial and temporal world as depending for its possibility on timeless and spaceless reality.

On the practical side, he not only pursues ends which far transcend the limits of his own existence; he is capable of striving after an ideal good, which can never be completely attained, towards which he can only advance through an endless progression. Further, one who seriously pursues this ideal recognises that he *ought* to pursue it; but this is unintelligible if it is taken to stand by itself as merely an ideal, a figment of his own invention. It can have the supreme practical worth which he ascribes to it, only if the obligation to follow it is founded on the nature of what really exists. One way, and perhaps in the long run the only tenable way, which man has found of making this intelligible to himself, is through the concept of an eternal being possessing in complete fullness the sort of perfection which we endlessly aspire after. It is indeed startling that all this should be possible to beings limited as we are. It seems nothing short of miraculous, if we regard the experiencing self as analogous to a physical phenomenon, and attempt to conceive it only in terms of the categories familiar to the physical sciences. None the less it is a fact which must be accepted with natural piety and cannot be evaded by any distinction between an empirical and transcendental self. All that is left for us to do is to start from the facts as our basis and to inquire into what, in the Kantian sense, we may call its *a priori* conditions—its indispensable implications.

4. *Transcendental Synthesis*

We are not yet finished with the Transcendental Self. We have to consider it in connexion with another side of the Kantian Philosophy, the intensely obscure and difficult doctrine of *a priori* Synthetic Activity. According to Kant, the phenomenal world is the product of a process; and since to be a phenomenon is to be knowable, the same process must coincidently generate phenomena and the knowledge of them. As an indispensable condition of knowledge through experience this process is *a priori*. But it is not *a priori* in the same way as space, time, and the categories. These are discoverable by critical analysis as factors ingredient in the product itself—experience. But the generative process must, so to speak, be behind experience, as a timeless activity in the region of things-in-themselves.

The only ground for assuming its existence and the only clue to its nature, if there be any such ground or clue, must be found in the nature of the phenomenal knowledge which is supposed to result from it. Kant starts, it would seem, from the mutual indifference and irrelevance to each other of the two fundamental factors of the phenomenal object—unity and diversity—and the corresponding factors in our knowledge of it—thought and sense. If we abstract entirely from the forms of unity which as pure concepts of the understanding are forms of judgment, there is left only a bare manifold, spatial and temporal. In the intrinsic nature of the manifold, abstractly considered, there is no reason why its parts should be interrelated according to the purely conceptual forms of unity. This had been shown by Hume for the special case of causality. Starting from the temporal sequence '*a* after *b*' there is no way of reaching the hypothetical judgment, 'if *a* then *b*'. The hypothetical form of judgment seems to be arbitrarily superimposed on a matter alien to it. On the other hand, if we abstract from the spatio-temporal multiplicity of the phenomenal object and consider merely the bare forms of thought, there is left only a certain sort of relation, with nothing to determine, even in the most general way, the nature of the related terms, or even to determine that there really are terms at all which enter into the relation. The bare formula 'if *x* then *y*' does not of itself in any way specify what *x* and *y* are, or even warrant us in asserting that *x* and *y* exist at all.

It would therefore seem that, on the objective side, unity and diversity, on the subjective side, thought and sense, have no intrinsic connexion with each other. Yet in knowledge through experience they are inseparably blended, and it is only because they are so blended that knowledge through experience and the phenomenal world are possible at all. Kant inferred that their union must be due to a process which he calls the *Transcendental Activity of Synthesis*. The use of the term *Synthesis* naturally suggests some analogy to other processes which may be properly called synthetic. But a closer examination shows that fundamentally there is no such analogy. In all other cases, the items which enter into relatively new combinations are already interrelated nearly or remotely within the complex unity of a pre-existing whole, and if this were not so the new synthesis would be impossible. The new synthesis is possible only as a fresh development of pre-existing synthesis. Oxygen and hydrogen can, under certain physical conditions, unite as constituents of water, only because they are previously interrelated in other ways as constituents of the physical world. When Newton brought together such diverse phenomena as the fall of bodies, the tides, and the orbits of the planets, under the common law of gravitation, he performed what may be properly called a mental synthesis. But this was possible only as a further development of prior knowledge of the order of nature. What Kant meant by Transcendental Synthesis is radically and in principle different. It is not the formation or the discovery of new relations within a pre-existing whole. Rather, it is originally required to render possible any sort of complex unity. It is a synthesis not of differences with each other, but of mere diversity with mere unity. We may put together certain items in a certain way so as to form a chair, with its seat, back and legs. But it seems nonsense to speak of putting together, on the one hand the way in which the parts of a chair, as such, are combined, and on the other certain pieces of wood. This is to treat the form of union as if it were itself a piece of wood. Yet this is the distinctive nature of the supposed process which Kant calls Transcendental Synthesis. It is true that the forms of unity he refers to are not empirical like that of a chair, but enter indispensably into the constitution of whatever we can know through experience. But this only intensifies the difficulty. The Kantian position, if it is tenable at all, is tenable only on the assumption that the supposed Synthesis falls within the domain not of experience, but of things-in-themselves, that it is 'noumenal', not phenomenal.

This raises the question: To what agent or agents does Kant attribute the Synthetic Activity? There are three alternatives;[1] it is a function either (1) of the empirical self or (2) of the transcendental self or (3) of factors concerning which nothing can be said except that they are generally conditions of experience and of its objects as such.

The first view seems to be followed in these passages which refer the process to the faculty of imagination in its pure or transcendental function. Kant insists that data *successively given* can be united in the knowledge of a phenomenal object, e.g. a temporal series, only if what precedes is mentally retained and combined with what follows. Only in this way are the ideas primarily generated which subsequently come to be connected with each other according to the laws of association of empirical psychology. Such primary retention and combination are referable neither to Sense nor to Thought, but to Imagination. From this point of view Transcendental Synthesis is regarded as if it were a temporal process passing through successive stages in the life-history of an experiencing individual. But on the properly critical view that phenomena as such are real, this is plainly absurd. It would make the general constitution of the really existing world of phenomena dependent on the agency of a small part of it. The understanding would literally generate the order of nature. The whole doctrine should be regarded as a survival of the pre-critical view of phenomena as mere appearances of things as they are in themselves, and more especially of temporal process in the empirical self as a mere appearance of what is really the timeless activity of the Transcendental Self.

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[1] There is a fourth alternative which is quite foreign to Kant's way of thinking, namely that the process is absolute, and presupposes no factors or conditions beyond itself. This leads towards Fichte and Hegel.

This brings us to the second alternative. It is the Transcendental Self which generates by a Synthetic Activity the world of our experience together with our knowledge of it. This may be regarded as the prevailing and, so to speak, the orthodox teaching of Kant.

The third alternative, though nowhere explicitly stated in the *Critique*, is, as Mr Kemp Smith cogently contends, the only logical development of the Kantian philosophy. We may take it together with the second alternative, inasmuch as both agree in referring Transcendental Synthesis to the region of things-in-themselves, thus precluding all possibility of tracing its presence within our mental life. This being so, why need we assume it at all? If there is any reason, it can only be that for reflective analysis the phenomenal world and our knowledge of it bear the character of manufactured articles, inasmuch as its two fundamental factors, the forms of unity and the manifold of particulars, can be seen to be in their own nature loose and separate from each other. If this is so, it follows that the diverse particulars must also be loose and separable from each other; for the only bonds which could unite them inseparably are the forms of unity, and these confessedly fail to do so. We are thus brought back to the position from which Hume started; and the whole elaborate apparatus of the Critical Philosophy, so far from showing that he is wrong, has shown that he is right.

Hume had maintained that, for critical reflexion, what we take for knowledge founded on experience, inasmuch as it goes beyond actual sense-impressions and the memory of actual sense-impressions, is really not knowledge at all;

it is only groundless belief, psychologically traceable to habit or blind instinct. Coincidence with what actually takes place can only be accounted for by what Hume calls 'Providence'. Kant, on the other hand, cogently asserts that the claim of experience to give knowledge cannot really be called in question. There is no independent criterion by which we could pass judgment on it. Such a criterion could be supplied only by Pure Thought. But Pure Thought, even if it exists at all, is not knowledge.

The claim to be knowledge is a claim to be valid, a claim to be logically warranted belief. Now, the existence of beliefs may be only matter of fact; but not their validity or logical justification. This means that the claim to validity must in some way rest on *evidence*; and where the claim is direct and ultimate, not resting on assumptions and presuppositions, the appeal must be to what can only be called self-evidence or evidence from the nature of the case. It follows that whatever principles are essential in knowledge through experience must be evidently valid. In practice no one thinks of doubting this. I do not only believe that if I hold my hand in the fire before me, it will probably be burnt; I also take for granted that in so believing I am justified, and justified in accordance with some general principle or principles of connexion between premise and conclusion, common to this and other cases of inference from given matter of fact to matter of fact which is not given. Following Hume, we may name it the principle of Causality. It is for Theory of Knowledge to determine what these principles are, and in what way they are evident and what are the limits of their application.

Obviously they cannot themselves be known by inference from experience, as e.g. it is known that fire burns or water drowns. They must be primarily evident. But how? Certainly not as principles revealed independently of experience, through 'Reason' or 'Pure Thought' or otherwise, and then externally imposed on data in their own nature indifferent to them. It is only in the process of knowing through experience that we can be aware of the validity of the process, and therefore of the principle or principles according to which it takes place. The proof of the pudding is to be sought for in the eating of it and nowhere else. If we artificially attempt to turn our back on experience and seek for the meaning and the evidence of the causal principle in some other direction, we shall not find what we seek, nor indeed anything else. There is no ground of induction separately ascertained, or postulated, independently of the inductive process itself. It is only in the actual process of inferring that, for example, this fire will burn my hand, that I can be primarily aware of the validity of the inference. It is a further question what *general* connexion between premises and conclusion is required to make this type of inference valid. Kant's analysis of the indispensable conditions of possible experience is no doubt an extremely important contribution to this problem. But the validity of inference in matter of fact, and whatever principles it may be found to imply, cannot rest on the Kantian philosophy. If it did, no one would have any real justification for believing that fire would probably burn him unless and until he had mastered the *Critique of Pure Reason*. What is worse, the argument of the *Critique* would lose its essential basis. The essential basis is the assumption that knowledge through experience really is knowledge and not blind belief.

But the doctrine of Noumenal Synthesis starts from the opposite assumption. It presupposes that the categories are evident neither independently of experience nor in experience.

5. *Evidence and Experience*

The general argument of the *Critique* for the validity of synthetic *a priori* principles breaks down entirely unless it shows that such principles are *evident*, not indeed independently of experience, but in the actual process of knowing through experience.

What warrant has Hume for asserting universally that the 'contrary of every matter of fact is still possible'? He has not examined every matter of fact in turn so as to ascertain that the proposition holds good for each of them. He proceeds by adducing an example. 'It is equally conceivable', he says, 'that the sun will and that it will not rise to-morrow.' This is evidently true, if we consider only the event of the sun's rising or not rising, in abstraction from the context of prior, concomitant, and subsequent circumstances. But how are we justified in ascribing the like contingency to every matter of fact? We find the justification when we reflect that sunrise is only one instance among others of a matter of fact. We then see that the special nature of this or that particular matter of fact makes no difference to the truth or falsity of the general principle. The principle cannot therefore be evident in the case of the sun's rising to-morrow without being evident for every particular matter of fact. The contrary of *every* matter of fact is possible.

So far the question of causation has not been touched at all, except in the sense that it has been deliberately ignored. It arises not in merely thinking of the sun rising or not rising, but in inquiring whether in fact it will rise or not. It is in this experience of seeking a decision between possible alternatives, especially when the search takes the form of active experiment, that the evidence of the causal principle is brought home to us. What is then evident is that there must be some difference in the circumstances to account for the actual occurrence of one alternative rather than of any other. Primarily this is evident only in the concrete instance, in the actual process of inductive inference which is constantly proceeding in the life-history of an individual from his cradle to his grave. When, at a relatively advanced stage, we form the general conception of an event and its conditions, we can see that the special differences between one event and another are irrelevant to the validity of inference in matter of fact. We thus arrive at the general maxim that all events depend on conditions in such a way that variation in the event involves corresponding variations in its conditions. But it is a fundamental error to suppose that the general maxim has any evidence of its own independent of its special cases. Only in and through these can we realise what it means; and only in realising what it means can we discern its validity. In this sense and in no other I can accept the Kantian position that such principles as that of causation are valid only as conditions of possible experience.

There is in the long run no self-evidence which is not what I have called evidence from the nature of the case. This holds for the principles connecting premises and conclusion in deductive as well as in inductive reasoning. The formal principle of the syllogism, however we may formulate it, can be seen to be evident only by realising what it means; and in the end we can realise what it means only by reference to particular examples of this, or essentially analogous, types of inference. This is the point of Locke's doctrine that 'God has not been so sparing to men to make them barely two-legged creatures, and left it to Aristotle to make them rational'.[1] Even the Law of Contradiction is self-evident only in experience and not independently of experience. To quote Locke again, the child who has never heard of the Law of Contradiction or is incapable of understanding it, knows 'that an apple is not fire'; and he cannot know this without knowing that it cannot *also be* fire.[2] In such special instances he learns what it is to be incompatible or inconsistent. But while he remains at this stage, he is aware of incompatibility only implicitly in apprehending particular instances of it. Hence he is not yet capable of understanding what is meant by the Law of Contradiction. But when he comes, through such processes as comparison and abstraction, to distinguish incompatibility in general from this, that, or the other special case, he is in a position to grasp what is meant by saying that the same subject cannot have incompatible predicates, or that a proposition and its contradictory cannot both be true. To see that this is evident it is sufficient that we understand what it means. But what it means can be apprehended only in particular instances such as 'an apple is not fire'. Hence it has no evidence which is independent of their evidence. It is valid as a condition of possible knowledge through experience and not otherwise.

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[1] *Essay*, bk IV, chap. xvii, § 4.

[2] *Ibid.* bk. I, chap. i, § 23.

Chapter III

THE KANTIAN VIEW (*continued*)—THE TRANSCENDENTAL OBJECT

1. *The Kantian Conception of Experience*

Kant gives a new account of the meaning which must be given to the term experience, if like Locke we assert that experience is the source and the only source of knowledge. In this sense, experience must mean knowledge through experience. So considered it must involve in inseparable unity a sense-factor and a thought-factor, neither of these by itself being sufficient to constitute knowledge. What Kant does not perhaps sufficiently recognise is that the sense-factor, taken by itself, may also be called experience in a narrower and stricter application of the word. It is distinctively the presence of the sense-factor which justifies us in regarding as experience (or more precisely, as knowledge through experience) the complex unity of thought and sense. If the sense-factor could of itself yield knowledge, this would be knowledge through experience; if the thought-factor could of itself yield knowledge, this would be knowledge independent of experience. Hence sensations and feelings as such may properly be called experiences, and, to avoid ambiguity, when I am using the word in this strictly limited way I speak of 'immediate' or 'actual' experience. The fallacy of the Empirical philosophy as we find it in Berkeley, Hume, Mill, and in some degree in Locke, is that, in referring all knowledge to experience, it interprets experience in the narrow sense which excludes thought, instead of the wider which includes thought. Hence it tends to explain away the thought-factor altogether by reducing it to sensuous imagery. On the other hand, the Rationalist similarly isolates the thought-factor and regards it by itself as *a* source—and if, like Leibniz, he is thoroughly consistent—as the *sole* source of knowledge. Hence he tends to explain away sense altogether by treating it as only a confused way of thinking. In Kant's conception of Experience both these errors are corrected.[1]

2. *The Refutation of Idealism*

The general principle on which Kant proceeds in refuting subjective idealism is that there is no knowledge of the self prior to and independent of the knowledge of other things, and especially of bodies in space. This principle is fundamentally sound. The self, in order to be known to itself, must exist as an experiencing individual in the Kantian meaning of experience. Knowledge of a not-self is therefore an indispensable condition of self-knowledge. Nor can this not-self consist merely in other minds; for we can know these only as embodied selves in relation to our own embodied self. Hence, as Kant maintains, the self and the spatial world are for our knowledge inseparable. If either really exists the other must also exist.

3. *Things-in-Themselves and the same Things as Phenomena*

In Kant the distinction between phenomena and things-in-themselves takes two forms. He holds that the endless relativity of finite existence in time and space forbids us to regard it as the whole of being. It points beyond itself to an unconditioned reality which is not knowable through experience, and is therefore not phenomenal. With this side of the Kantian doctrine I am not at present concerned. But there is another view, which was, perhaps, ultimately abandoned by Kant, but none the less plays a large part in the *Critique*. On this view each particular physical object, e.g. this pen, has a being in itself which cannot be known through experience. The thing in itself, conceived in this way, is what Kant sometimes calls the transcendental object.

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[1] Thinking or 'intellection', regarded as belonging to a more advanced stage of development than perceptual process, is so named only *a potiori*, because the thought-factor is prominent in it. It ought properly to be called conceptual as contrasted with perceptual thinking. The difference is in the way of apprehending universals and particulars. At the perceptual level both are apprehended, but they are not discriminated from each other as they are at the conceptual. When I see a man I can recognise him as such without expressly distinguishing between man in general and this particular instance.

In general, he regards the phenomenal object as a mere appearance or representation of the transcendental, having no distinct existence of its own. This doctrine belongs to or survives from a stage in Kant's development in which he had not yet fully outgrown subjective idealism. It is well illustrated in Section VI of the Antinomy of Pure Reason.[1] We there find an account of phenomena which, however it may otherwise differ from that of Berkeley or Mill, yet agrees with theirs in the essential tenet of subjective idealism. Phenomena are supposed to exist only potentially, except in so far as they come to be actually present in the experience of the individual as this progressively develops. 'All events which have taken place in the immense periods that have preceded my own existence mean really nothing but the possibility of extending the chain of experience from the present perception back to the conditions which determine it in time.'[2] 'To call a phenomenon a real thing before it is perceived either means that in the progress of experience we must meet with such a perception, or it means nothing.'[3] From this point of view the 'transcendental object' is conceived as the intelligible cause of our experiences and of their ordered unity according to the categories. As such it is timeless and spaceless; for time and space, being forms of sensibility, belong only to the phenomenal world. It is consequently unknowable: we think of it, but cannot specify what it is. Evidently the transcendental object as thus defined must be given up, if we give up subjective idealism. There is no place for it if we adopt the standpoint of the Refutation and ascribe to phenomenal objects an actual existence which is coordinate with, and not dependent on, what occurs in the life-history of individual selves.

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[1] *Critique*, 2nd ed. pp. 591 sq. [2] *Ibid.* p. 523. [3] *Ibid.* p. 521.

However untenable the doctrine of the transcendental object may be as Kant states it, we may still raise the question whether there is anything in the nature of physical things that is unknowable. Granting that our physical knowledge, so far as it goes, is knowledge of things as they are in themselves and not merely of their appearances to us, yet it may be in principle defective. It may be defective in such a way that what is wanting to it cannot be supplied by any development of it through any means at the disposal of physical science. I hold that this is so. Owing to the limiting conditions of physical knowledge in finite beings, there are certain questions concerning the nature of the physical object which can never be answered by science, however far it may advance through observation and experiment, hypothesis and verification.[1]

4. *Residual Truth in the Conception of the Transcendental Object*

Physical objects are not themselves actually experienced as we actually experience our own sensa and feelings. Yet they are known through experience and not otherwise known at all. This means that the sole ultimate clue to their nature is supplied by what we do actually experience in sensation and in being active and passive. Now this clue, as I maintain, is not fundamentally misleading. So far as it goes, it yields knowledge of physical objects as they are in themselves. The point is that it is in a certain definable way insufficient. It yields a knowledge of the physical world in its general nature. But it is inadequate to determine correctly the particular characters of particular things. The reason is that what the individual actually experiences varies with variable conditions which affect him and do not affect the independently existing physical object. If therefore we are cognisant of the physical object only as the duplicate of what we actually experience in seeing or touching, the evidence of the senses would be, as Descartes said it was, in principle illusory. How then do we reach the determinate and trustworthy knowledge, e.g. of size, shape and relative position, which we have in ordinary life, and which is carried to so high a degree in science? Partly, and very roughly, by reference to a standard or 'normal' individual under standard or 'normal' conditions of perception. But mainly by considering relations of physical objects to each other which are taken to subsist between them independently of our sense-experience. This is the way in which we proceed in objective measurement, which has its primitive beginning in the superposition of our own bodies and their parts on things external to them. In such ways we measure things against each other and so determine their comparative size and *only* their comparative size. But in order to have a comparative size, they must have what we may here call an intrinsic size, which for ever escapes us. This applies even to the standard of measurement. All that is required to make it a standard is that it shall remain sufficiently constant for our purpose; and the ultimate test of its relative constancy is the coherence of the results which we reach by using it. Relative knowledge of this sort, so far as it goes, is still knowledge of things as they are in themselves. It is so, if and so far as the relations on which it is founded really subsist between physical objects, independently of the variable conditions of our sense-experience.[1] It is properly called phenomenal only because, from the nature of the case, it always leaves an unexplained remainder. There would be no such unexplained remainder if physical existence were not merely known through experience, but itself actually experienced as sensa are.[1]

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[1] In Book IV I shall try to show that philosophy has something positive to say on this point, of philosophical interest, though too general and indefinite to be of value to science.

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[1] Including difference due to the different position of the observer who makes the measurement. Modern relativity theories seem to depend on the impossibility of eliminating such differences, taken together with recent discoveries about light.

5. *Is the Physical Object a mere Conception?*

According to Kant, what he has proved in the Refutation of Idealism (second edition) is that if knowledge through experience is to be possible, we must not only have the idea of bodies, but bodies must actually exist. Is this claim justified? The question suggests a form of subjective idealism which we have not yet expressly considered. On this view the conception of physical existence, with all that it implies, is logically no more than a methodological device without which Common Sense and science could not trace the order in which sensa occur. This leads to an extreme subjective idealism of the sensationalist type, with its inevitable implications fully admitted. Just because it is consistently followed out it refutes itself. Its essential motive is to confine knowledge only to what is actually experienced or experienceable. In the attempt to do this it has to posit an order regulating the occurrences of actual and possible sensa, which far transcends any data that can be directly found in actual sense-experiences taken by themselves. On the contrary, it cannot be conceived or described without supposing as its condition an immense range and complexity of physical things, events and relations. To treat these as merely useful figments is logically suicidal. There is no ground for believing in the order according to which sensations occur, which is not *eo ipso* a ground for believing in the order of physical existences, without which the sensational order cannot be conceived or formulated. It is true that the working hypotheses of science may be and perhaps always are more or less fictitious. But this yields no support to the proposal to treat the whole physical system as a figment. The scientific hypothesis, however inaccurate it may be considered as a transcript of what really takes place in the physical world, always proceeds on the presupposition that something of a physical nature does take place. The essential presupposition is that the hypothesis may so far agree with or be equivalent to what really goes on, as to explain observed, and make it possible to predict unobserved facts. The wider and more varied the facts and the more precise the explanation and prediction, the more nearly, in certain relevant respects, is the hypothesis taken to conform to what actually occurs. Compare, for instance, the atomic theory as first formulated by Dalton with the atomic theory of modern physics and chemistry. A further point is that the observed facts which verify or falsify scientific hypotheses are always themselves at least in part physical. If the student of physical science really succeeded in confining himself to mere sensa as they come and go in actual experience, he would find himself without any basis for further advance.

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[1] Some points in this section are more fully discussed and explained in Book IV, chaps. IV and V.

Actual and possible sensa, and their order, form without doubt an indispensable part of what we ordinarily mean by the material world, but they cannot be all that is required to constitute it, for their order is determinable only by reference to physical factors which are not actually sensated at all. Of these physical factors the body of the percipient is always one; the course of our sense-experience is directly connected with what occurs in this, and only indirectly with what occurs in other physical things.

6. *The Fallacy in the Kantian Doctrine*

Kant is wrong in treating things in themselves as entirely disparate, in their fundamental nature, from phenomena. The reasons that led him to this view are contained in the

Transcendental Aesthetic. The doctrine of the subjective nature and origin of space and time which is there expounded is a stumbling-block on the threshold of his philosophy, and both he and his readers are constantly tripping over it. It rests on the rationalist assumption, taken over without question from Descartes and Leibniz, that sense-perception as such does not at all reveal the nature of things-in-themselves. But Descartes held space to be not a percept, but a concept due to our nature as thinking beings. The innate idea of extension in three dimensions is, he holds, an ingredient in sense-perception, and in this form is masked and obscured. But it is capable of being disentangled from sensuous presentation as the content of a pure thought. In this pure form it is a clear and distinct idea, and as such reveals the nature (though it does not warrant the existence) of a physical world as it is in itself. Leibniz follows suit, except that for him the content of the pure thought is not continuous extension, but a system of relations between monads. Now Kant is entirely at one with his rationalist predecessors in arguing that our knowledge of space cannot be derived from contingent and variable sense-perceptions, and he accepts unquestioningly the implication that it must be of subjective origin. He differs crucially from them only in maintaining that we apprehend a spatial world, not because of our fundamental nature as *thinking* beings, but because of our fundamental nature as *sensitive* beings. Space is a subjective, *a priori*, form of intuition, not of thought. But in asserting this he continues to abide by the rationalist position that it is impossible to know, by way of sense, the nature of things as they are in themselves. Hence it follows for him that the physical world as it is in itself must be non-spatial. He then deals with time in an essentially similar way. He thus reaches the distinction between phenomena in space and time as alone knowable, and a region of things-in-themselves or things as they are in themselves which, as non-spatial and non-temporal, are entirely unknowable. All justification for this view is lost if we reject the dogma that sense merely conceals instead of revealing the nature of things as subsisting independently of our sense-experience. But this dogma makes any tenable theory of knowledge hopeless, and is really inconsistent with what is most valuable in Kant's work.

Chapter IV

CRITICISM OF TYPICAL THEORIES

1. *Subjectivism*

In dealing with Kant I have already anticipated much that I would otherwise have had to say in this chapter. In particular, the Refutation of Idealism in the second edition brings to light the fundamental fallacy of all views which may properly be called subjective because they are founded on the assumption that the course of our experience might be such as it is, whether a physical world exists or not. The fallacy lies in the dogma that we can know what belongs to our own being as experiencing or thinking individuals without knowing anything else, and, more especially, without knowing the existence of physical objects. As Kant insists, we know ourselves only as part of a context including bodies in space, so that our own reality is inseparable from their reality. Kant's own way of applying this general principle, in the Refutation, seems to me of doubtful cogency. I must therefore follow it out in my own way.

I showed towards the close of the last chapter how the sensational form of subjectivism collapses when we apply the Kantian test. All such theories rest on the postulate that it can make no practical difference to us whether physical objects exist or not, provided that our sensations and the order of their occurrence remain the same as we now find them to be. That they might remain the same is taken for granted, and it is therefore maintained that physical existence is merely a hypothesis which, even if otherwise tenable, is from the nature of the case unverifiable. The whole theory breaks down when we recognise that sensations, actual and possible, have no fixed order of their own: the order of their occurrence is determined only as part, and a relatively small part, of the comprehensive order of nature which includes the body of the experiencing individual in interaction with external objects. As I shall maintain in Book IV, chap. i, this holds good even in primitive stages of mental development.

It would, however, be a grave error merely to reject the sensational theory without expressly recognising that it emphasises a partial truth which we can by no means afford to neglect. Sensa are in themselves real existences and not merely ideal 'representations' of a reality beyond them. Further, they and their order constitute an integral part of what we mean by the material world. The material world is not only a world of physical existence; it is also a world of sensible appearances, and to this extent it *is* actually experienced or experienceable. No theory can be satisfactory which does not show how these two factors are fundamentally akin in nature and continuous in existence. This implies that sensa are not mental in any sense of that very ambiguous term which would debar us from regarding them as also material.

In the rationalistic form of subjectivism it is assumed that all that we actually experience is the process of thinking, and that sense-perception and imagination are only special modes of thinking. It is subjective idealism because it assumes that all that we are cognisant of in thinking, besides the fact that we think, consists in our own 'ideas'. An idea is regarded merely as a content of thought, which, though it somehow claims to represent a reality beyond itself, has no real existence of its own distinct from the thinking process. Its being consists in being thought. The gist of subjective idealism properly so called, as distinct from sensationalism, is that even though the physical world did not really exist, our ideal representation of it as a whole and in detail might be such as it now is; and that if this were so it would make no practical difference to us whether it exists or not.

The question at issue may be most sharply defined by considering the Cartesian formula 'Cogito, ergo sum'.

Descartes insists that we are certain of our existence only because we are thinking beings. So far we may be able to follow him. But he also takes for granted as a necessary consequence that we may be and are certain of our own existence as thinking beings without also being certain of anything else as really existing. This is a fallacy of confusion. It is as if one should say that because a cup is lifted by the handle, only the handle is lifted and not the cup. In fact, we do not and cannot know ourselves merely as thinking beings, but as embodied selves, so that our existence involves that of our mind and body in one.

Descartes would reply that though the thinking self has the *idea* of a body with which it is intimately united, and a propensity to believe in its existence, it does not follow that the body really exists, but only that it seems to exist. There may be nothing conforming to the ideal representation. To this it might be sufficient to answer, in the spirit of the Kantian Refutation of Idealism, that in self-consciousness the thinking self and its body are so essentially connected, that we cannot know the real existence of the thinking self without knowing it as a really embodied self. But this argument, at the best, only shows that the Cartesian position must be wrong, without laying bare the source of error. The fallacy ultimately lies in the view taken of ideas as merely contents of thought, so that their being consists in being thought of. It is as if one should say that what is eaten, e.g. an apple, has no being apart from the process of eating it. The apple, it is true, is *food* only inasmuch as it is eaten or eatable. But in order to be food for someone it must have a being of its own independent of the process of eating. Similarly nothing is an *idea* except in so far as it is or may be thought of by someone; but in order to be an idea it must have a being of its own independently of anyone thinking of it. Our judgments, whether true or false, can be so only as referring to something which is in this sense real.

2. *Sensational Realism*

Under this title[1] I refer to the doctrine most elaborately advocated by Mr Alexander, that sensa are themselves the physical objects of which we are directly aware in sense-perception. The sensible appearance is itself physical fact.

In order to decide how far this view is true or false, we must clear up an ambiguity in the phrases 'sensible appearance' and 'appearance to the senses'. These phrases may mean what the physical object appears or *seems* to be in sense-perception, or in other words what it is perceptually judged to be or would be judged to be if the judgment were not otherwise corrected. The ink-pot before me rightly appears or seems to be of a certain physical size and shape; the moon, when I look at it, wrongly appears to be of a certain size and shape. In both cases the judgment is about the nature of physical reality. If and so far as it is right, what physically exists is simply identical with what seems to exist; if and so far as it is wrong there is a difference; but the difference is due only to a mistake, and the mistake is a mistake about what is physically real and about nothing else.

But 'sensible appearance' may also be taken to signify something fundamentally different from anything which only seems or is judged to exist, whether rightly or wrongly. It may be taken to signify the actually experienced sensum which, inasmuch as it is actually experienced, must actually exist. Understood in this way the sensible appearance certainly cannot be identical with what the physical object really is or with what it erroneously seems to be. My visual picture of the moon when I look at it does not merely appear to be smaller than the visual picture of my hand; it really is smaller. But the moon as it objectively exists and moves round the earth is enormously larger than my hand. The only way in which the sensible appearance could be identified with the physical object would be by assuming that the physical object in entering sense-experience is altered in its physical nature. But this is of course absurd. The moon remains of the same size and shape whether I see it or not. When in double vision there seem to be two candle-flames, the candle-flame itself is not really doubled, though there really are two sensa each of which separately suggests a candle-flame.

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[1] It is hardly fitting to call it the New Realism, as it is now no longer new and is perhaps even becoming obsolete.

Sensational realism as it stands is untenable. But I am far from saying that it is sheer error. It contains the same fundamental truth as sensational subjectivism. Sensible appearances do essentially enter into the constitution of the material world. The error of sensational subjectivism is to attempt to substitute them for physical existence. The error of sensational realism is that it treats sensa as physical objects.

3. *Monadism*

What we take for an independently real material world is in fact, according to the Monadist, real independently of us; but it only seems to be material. As it is in itself it is not spatial, extended, figured, etc. It appears in this character to us only because we apprehend it by way of sense and sensory imagination; but this way of apprehending it does not reveal its intrinsic nature. In itself it is a system of experiencing individuals or monads conceivable only through the analogy of our own being as known in self-consciousness, though differing immensely from us and from each other in the degree of their perfection.

If what we are primarily cognisant of in self-consciousness is not a pure mind, or *res cogitans*, but an embodied self, it would seem that Monadism is essentially founded on a fallacy. The only answer open to the monadist is that what appears to each of us as his own body is really a group of monads related in a peculiarly direct and intimate way to our mental life. Is this reply satisfactory?

It rests on the assumption that sense-perception fundamentally masks and disguises the picture of things as they are in themselves, so as to make them seem to be material though they are really not so. Now if we start, as Leibniz did, from the rationalist position that sense is only obscure and confused thought, the assumption is defensible and even inevitable. Otherwise it is very far from being evident. On the contrary, whatever ground we may have for asserting the real existence of what we apprehend as matter is *primâ facie* a ground for holding that it really is material, as it seems to be. Against this we have to set the indirect arguments by which Leibniz, Lotze and Ward have attempted to show that the conception of independently real matter or 'material substance' involves intrinsic absurdities. But these arguments, so far as I can admit them to be cogent, are cogent only as against the view that the physical world is *merely* material; in other words, that its general nature can be conceived in terms of sense-experience to the exclusion of animistic implications. So far as they may seem to prove more than this, they do so through a partial *petitio principii*. The argument of Leibniz from the infinite divisibility of spatial extension is a typical example. He takes for granted as an evident principle that the so-called physical world must be ultimately composed of indivisible units, each in its individual nature so independent of the others that it might conceivably exist by itself. As extension is infinitely divisible, the ultimate units cannot be extended; nor can they be mathematical points, for these are not real independently of extension. Either their intrinsic nature is quite unknowable, or the key to it must be found in our own nature as revealed to us in self-consciousness. But the key will not fit the lock without previous manipulation; for as we know ourselves in self-consciousness we have not the self-contained independence which is essential to the conception of a monad. Hence Leibniz is first bound to treat the self as a monad, before he can proceed to interpret the nature of other monads through the analogy of the self.

There is therefore no warrant for holding that what seems to us to be the material world is, in fact, not material at all but merely mental, that, e.g., what appears to us to be a table is in fact a plurality of experiencing individuals. The difficulty is greatly intensified on Ward's view that the monads are immediately known—are themselves existentially present as immediate contents of experience. If they themselves thus actually appear to me, how is it possible that they should appear not as monads but as bodies in space?

The self-contained individuality of the monads led Leibniz to deny that they could act on each other. Each is essentially active within itself in striving after its own self-maintenance and self-development; but there is no reason why what takes place in one should make any difference to what takes place in others. Hence follows inevitably his doctrine of 'Pre-established Harmony'. This has not been accepted by his successors; but they cannot be said to have fairly disposed of his reasons for denying interaction. In the attempt to do so, Lotze is driven virtually to give up the conception of monads and to substitute modes or phases of one all-embracing individual mind. Ward says that his monads can interact because and only because they are immediately presented to each other; but as I have just urged, this is an impossible view. Supposing, however, that some sort of interaction is admissible, it cannot, at any rate, precondition the individual being of the monads as such. There is therefore a peculiar difficulty in treating our awareness of our embodied selves as a well-grounded appearance, having its real counterpart in the relation of a subordinate system of monads to the self. For in our awareness of ourselves as embodied, the body appears to belong to the individual being of the self rather than to the not-self. It is included in what we mean when we say 'I'. The monadist is right in insisting on the omnipresence of mind in nature; he is right also in insisting that mind in the long run can only be individual mind, and that inversely where there is no mind there is no individuality. But he goes astray in taking for granted that the demand for individuality can be satisfied only on the assumption that the universe of finite existence is composed of nothing but experiencing individuals. Neither Leibniz, Lotze, nor Ward has been able to rest satisfied with this monadist theory as sufficient by itself. They have all been driven to posit, besides finite and therefore imperfect individuals, a perfect individual on whom the whole world of finite existence essentially depends. Given the universal mind, it is futile and arbitrary to posit also an endless multiplicity of finite individuals for whose existence we have no evidence, and to suppose that the universe is through and through composed of these and of nothing else.

Chapter V

IMMEDIATE KNOWLEDGE AND IMMEDIATE EXPERIENCE

1. *Recapitulation*

The following points emerge from the previous discussion as the basis of further inquiry:

(1) Any theory which denies or doubts or attempts to explain away our knowledge of an independently real physical world is for that reason a failure. It must be proceeding on false assumptions.

(2) Such knowledge originally includes embodied self and external object in distinction from and correlation with each other.

(3) It is immediate, not due to inference.

(4) None the less, the physical existence which is immediately known is never actually experienced as sensations and feelings are.

Are (2), (3) and (4), taken together, compatible with each other? Can we know immediately and not by inference the actual existence of what is not actually experienced? We must begin by considering whether this is self-evidently absurd, and also whether apart from the special case of physical objects there is any positive evidence to show that it is possible.

2. *Experience and Knowledge of Existence*

Is it self-evident that we can immediately know the actual particular existence only of what is given *in* and not merely *through* actual experience? I do not find that this is self-evident: others have apparently never thought of doubting that it is so. How is the question to be decided? To be self-evident is to be evident from the nature of the case. To determine, therefore, whether a proposition is self-evident or not, we must not shut ourselves up in mere generalities; we must descend to particulars and scrutinise relevant cases, each trying the experiment for himself.

When I try to fix attention on a sensum or feeling as such, I find in the first place that I cannot isolate what I am actually experiencing from what I am not. I can only distinguish it within a context, not detach it from the context; and this context always includes real existences which are not being actually experienced at the moment. Even the attempt to mark off with precision what is actually experienced from what is not involves a difficult effort of abstraction, and we rarely, if ever, can be certain that it is quite successful. So far as we do succeed, it becomes evident that we can immediately know and know about what we are actually experiencing in a way in which we cannot know or know about anything else. This way of knowing may be called knowledge by acquaintance, if we are careful to avoid confusion of this strict use of the term *acquaintance* from other and looser applications of it.

Can we know immediately the existence of what we are not in this strict sense acquainted with? That there can be no direct knowledge of existence, separate from and independent of knowledge by acquaintance, does seem to me to be evident from the nature of the case; and even if it is not self-evident, we have every reason for asserting it and none for denying it. We must have a foothold in actual experience if we are to know either immediately or by inference any other real existence beyond it. But this does not bar the possibility that what we actually experience may be so connected in inseparable unity with what we do not, that we cannot be cognisant of what we are actually experiencing without, *ipso facto*, being cognisant of relevant real existence beyond it. Further, the connexion may be so intimate and fundamental that it escapes us if we attempt to treat the knowledge of it as an inference, discriminating premise and conclusion, and the implication of the conclusion by the premise.

Why has it been so commonly assumed as self-evident that immediate knowledge of existence can extend only to what is actually experienced? One main source of fallacy is to be found in causal theories of knowledge. If what is actually experienced is regarded merely as an effect, the experiencing individual can have no clue to anything existing beyond it except through an inference from effect to cause. Another reason, perhaps equally important, is the persistent influence of the Cartesian doctrine of ideas. If real existence which is not present in actual experience is to be immediately known, it must be directly present to thought. But the possibility of this is precluded from the outset if we assume that the immediate object of the understanding when a man thinks has no being apart from the process of thinking. A third reason which is important when taken together with the others is the ambiguity of the term *experience*. As I have already pointed out, *experience* may be used in a narrow sense for actual or immediate experiencing. It may also be used comprehensively for knowledge through experience, which involves thought or judgment as well as mere sensation or feeling. Failure to distinguish these two meanings makes it easy to take the view that the original data known through experience must be actually experienced, and cannot therefore include even a rudimentary cognisance of physical existence.

3. *The Possibility realised in Memory of the Past*

Setting aside physical existence and adopting provisionally the subjective standpoint, we can still produce at least one clear example of immediate knowledge of existence which is not actually experienced at the time and in the process of knowing it. I refer to memory-knowledge of what we have actually experienced in the past in contrast to the present. A man is thirsty and desires to appease his thirst by drinking. In this state of desire the man does not actually or immediately experience the quenching of his thirst. For the desire and its satisfaction are incompatible; they cannot be actually experienced at the same time. Let us now suppose that the thirsty man has just quenched his thirst. What he is then immediately cognisant of is the bygone actual experience of being thirsty, not any present simulacrum or image of it with the sting extracted. The object, or part of the object, of his thought and attention in remembering is the actual occurrence of the felt thirst as he lived through it in the past, distinguished from and contrasted with his present situation. He is not living through it while he is remembering it as past. Thirst satisfied and thirst unsatisfied are so far incompatible that they cannot both be actually experienced together.

I do not of course mean to deny that in such reminiscence the nature of the present experience is determined by the nature of the remembered past experience; I do not deny, though this is more doubtful, that the present experience always in some manner and degree resembles the past. What I insist on is that we can distinguish the past as such only inasmuch as we are aware of some incompatible difference between it and what we are actually experiencing in the moment of remembering it. Indistinguishable similarity would preclude reminiscence. This, if it ever happens, is a rare occurrence. But approximations to it are on record. Galton, for instance, tells us that in his advanced age he frequently recalled the scenes of his youth so vividly and with such detailed distinctness that he found it hard to realise that they were past and not actually present. Sometimes, if I understand him rightly, he failed to realise this at all.

Memory-knowledge of the past as such may be in varying degrees definite or indefinite. Besides remembrance of specific occurrences in the bygone history of the individual, it includes all immediate apprehension, however vague, of the present moment of his experience as continued from his past. It includes, therefore, all recognition of anything as not entirely novel. It includes also all apprehension of duration and change in which what precedes is discriminated from what follows.[1] In general, it is only through memory that we are aware of the present moment of our experience as not being the past.

4. *Reminiscence and Retentiveness*

The true nature of such knowledge, as primarily and immediately concerned with the past as such, is obscured by the ambiguity of the term 'memory'. This stands not only for what we may call *reminiscence*, as a primary way of knowing the past as such, but also for *retentiveness*, as an indispensable condition of the unity and continuity of individual experience in general. There is retentiveness in so far as in fact, whether we know it or not, the result of the bygone process of individual experience persists and is carried forward, as occasion requires, into subsequent experience. In memory as reminiscence, on the other hand, what we are cognisant of, vaguely or definitely, is previous occurrence of the bygone experience itself as belonging to our past history. Retentiveness stands for the fact, reminiscence for the knowledge of the fact so far as this is immediate and not inferential. I now know the multiplication table in consequence of having learnt it in my childhood. The mental work which I then did does not now need to be repeated. In other words, the result of the process of learning is retained. But it may be doubted whether I remember the process itself at all. I have certainly forgotten the several particular occasions on which I said to myself 'twice one are two', etc. In pathological cases of repression, there seems to be a complete failure of reminiscence, but not of retentiveness. A boy, for instance, is imprisoned in a narrow passage with a savage dog; in after life he is quite unable to remember this experience as a past occurrence; but its result is retained and carried forward into subsequent experience as a horror of confined spaces, and in other ways. On the other hand, when he does come to remember the past experience as such, his horror of confined spaces and other mental troubles cease or are greatly mitigated.

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[1] In what is called the 'specious present' such discrimination fails because the duration or change is too short to admit of it.

It would seem that retentiveness may be completely or almost completely separated from reminiscence. But the inverse is not true. There is no reminiscence without retentiveness; otherwise there would be knowledge entirely independent of experience.

Failure to distinguish clearly between retentiveness and reminiscence leads to the view that in remembering the past as such what we are directly cognisant of is only a revival, reproduction or memory-image of the bygone experience, and not that experience itself as it actually occurred. At the same time, fact conflicting with theory leads to the confused assumption that to know the present revival is of itself to know the past occurrence. The most striking illustration is found in Hume, though the confusion is far from being confined to him. He starts by assigning 'impressions' and 'ideas' as the only primary data of knowledge. These are so because they are all that we directly perceive, or, as I should put it, all that we actually sensate or feel. An impression in order of time is an original experience; the corresponding idea is a subsequent fainter copy of it. That it is a subsequent fainter copy is all that from this point of view he ought to mean when he calls it the idea *of* the impression. But if he consistently abided by this position, he could not stir a step in working out a philosophy even of the most sceptical character. Hence he surreptitiously takes a step of momentous importance, with no indication that he recognises its significance. He substitutes the term 'thought' for 'idea' as if they were synonymous. He thus covertly implies that in perceiving an idea we not only perceive what is in fact a copy of an impression, but also think of it as being a copy, and therefore think not merely of the copy but of the original. The whole foundation of Hume's scepticism is destroyed if it is once admitted that the fainter copy of an impression may be so connected with its original that in perceiving the copy we *eo ipso* know immediately not only this, but the previous existence of the impression as the original of the copy. For to admit this is to admit necessary connexion in matter-of-fact. In dealing with causal inference, with the belief in external objects, and with the belief in the unity and identity of the self Hume applies with relentless vigour the principle that there can be no such necessary connexion between distinct matters of fact as to make it possible for knowledge of one to involve, *ipso facto*, knowledge of the others. Yet in assuming memory-knowledge of the past as an essential part of his original data, he covertly smuggles in from the very outset a fundamental and far-reaching exception to this principle.

The only question which remains is whether the case of memory-knowledge is in this respect exceptional. If this case is admitted, have we any sound reason for denying that there may be other cases? In particular, is the knowledge of physical existence in this respect analogous to our knowledge of the past in memory?

5. *Analogy between Memory-Knowledge and Knowledge of Physical Objects*

In reminiscence we transcend the immediacy of actual experience at the moment; but what we are cognisant of has been actually experienced in the past history of the individual. Immediate knowledge of physical existence would, on the contrary, altogether transcend the actual experience of the individual, past, present, future and possible. Does this distinction in principle destroy any relevant analogy which would justify us in holding that if one is possible the other is possible?

Memory implies that what has been actually experienced in the past makes a relevant difference to what is actually experienced in the present. Otherwise our immediate knowledge of the past, from the standpoint of the present moment, would not be knowledge through experience at all, but purely *a priori* in the least admissible sense of that ambiguous term. It would be just as if the past experience had not occurred at all. We should know by a sort of clairvoyance. Yet the appeal to memory is not inference. If I try to separate out the character of my present which gives me my hold on my past, so as to make it a premise from which the past can be inferred, I entirely fail. Memory-knowledge of the past is immediate, though its conditions are complex.

Can the primary knowledge of physical existence be in like manner immediate? This can only be denied on the assumption that we are independently in possession of such insight into the nature of individual experience on the one hand and of the physical world on the other, as to warrant us in denying that they can have the same sort of necessary connexion as we find in memory-knowledge between the past and the present. Theories have been and are to-day widely current which would, if they were true, preclude the possibility of any such nexus between the actual content of individual experience and the physical existence which transcends it. But doctrines of this type turn out on examination to be dogmatic assumptions based on no sufficient evidence.

So far as modern philosophy is concerned we need take account only of those which have their beginning in the Cartesian opposition of matter and mind. The Cartesian theory of two mutually exclusive substances is obsolete. But the fallacy on which it is based still survives to perplex us. The fallacy consists in the tendency to treat those characters of the physical world which alone enter into the abstract scheme of science as constituting its whole nature. If we give up the mechanical view of nature, as philosophically inadequate, the difficulty ceases. The individual mind has no being independent of and separable from what it minds, what it is cognisant of and interested in.

But what it is cognisant of and interested in is the universe of reality, and itself only as part of this. The world is its oyster. Its knowledge and interest are indeed limited *by* but are not limited *to* the flow of actual experiences which constitute its own private life-history. Further, its knowledge and interest belong to it, not as mere mind, but as embodied mind confronting an embodied not-self.

What the limitation of knowledge through the limitation of actual experience accounts for is the fact that we are not omniscient. We are capable of knowing as such the whole to which we belong; but we are incapable of knowing its details except through an endless progressive process. In this process we gradually and tentatively win relatively definite knowledge from the field of relatively indefinite knowledge which we call ignorance. Ignorance is a privative, not a merely negative term. As J. F. Ferrier says, it is altogether different from the sort of nescience which we might attribute to a stone. It is a field for questioning or inquiry; hence only a being who is capable of knowing is capable of being ignorant.

Now if we ask why our knowledge is always in this peculiar way blended with ignorance, so as to be in detail forever partial and tentative, there can be only one answer. We cannot in the long run know anything beyond what we actually experience, unless, in the act of knowing it, we have a foothold in actual experience. On the other hand what we actually experience can never be known by itself: it is always only part, though an essential part, of our total object. The empirical philosophy is thus fundamentally right in maintaining that there is no knowledge except through experience, and in denying innate ideas, forms or categories imposed by the mind on its object. But it is fundamentally wrong in maintaining that therefore knowledge is primarily confined to what is actually experienced. What is true is that to be acquainted with this is an essential condition of knowing anything else. The course of actual experience in the individual is determined by the fluctuating circumstances of his finite existence as one part of the universe among others, limited and conditioned by his environment. Hence the limitation of his outlook on the universe and the tentative and progressive development of his knowledge and interest in the whole of which he is a part, and of himself as part of it. In this respect his knowledge of the physical world is not in principle on a different footing from his memory-knowledge of his own past.

It is a profound mistake in method to begin by forming independently a view of the distinction and relation of experiencing individuals and the physical world, and then on the basis of this preformed theory to proceed to inquire how physical existence can possibly be known. That it is known and known immediately through experience is more certain than any such theories can be. We ought therefore to start from this as ultimate fact, and accept whatever it is found to imply. If there is apparent discrepancy between these implications and what we take ourselves to know independently, our problem is not yet solved; we must have made some erroneous assumption. Theory of knowing and theory of being, epistemology and ontology, are in principle inseparable. We have no right to assert the nature of anything to be such or such, without being prepared to explain how we can know it to be such or such. On the other hand, we have no right to answer the question—How do we know this or that?—in a way which is incompatible with the nature of what is known. The problem is to find a coherent answer to both these questions at once. Failure to effect this means that we have erred on one side or the other. So far as regards the physical world, it appears hopeless to deny, both from the past history of philosophy and from the nature of the case, that it has a distinct existence independent of the process of knowing, or that it is immediately known through experience without being actually experienced. The point I am now pressing in answer to those who find it difficult to reconcile these positions with each other is that there is a fundamentally analogous case in which they seem to find no difficulty, that of memory-knowledge. Our own past as such has a distinct existence of its own independent of the process of knowing it; it is not actually experienced in knowing it; yet in remembering it we are cognisant of it immediately and not through inference.[1]

6. *Fallibility of Immediate Knowledge through Experience*

There is another very important analogy between the two modes of immediate knowledge through experience. Neither affords in general a guarantee against partial error. As regards physical existence I shall have to dwell on this topic more at length in the sequel. I shall therefore here mainly consider memory-judgments. There is a sense in which all these may be said to be trustworthy. Each yields at least a probable presumption, weak or strong, that the past is such as we remember it to have been, a presumption which can only be upset by sufficient evidence to the contrary, and independently supports in some degree any evidence by which it may itself be supported. But the presumption is of widely different grades of strength in different memory-judgments. Are definite memory-judgments ever completely certain? There seems no good reason for denying this. It is an arbitrary assumption that however closely remembrance of the past may approach theoretical certainty, it can never reach it, and in certain memory-judgments I cannot detect even a speculative chance of mistake. Whether this be an illusion or not, we may at least assert that probability is so overwhelming that for all the purposes of ordinary thought and conduct it is indistinguishable from absolute certainty.

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[1] My aim in this chapter is only to meet the general objection that because physical existence is not immediately experienced it cannot be immediately known. In Book IV, and especially in chap. VI, I shall try to show more positively how it is known.

Whether certain or uncertain, correct or erroneous, every genuine remembrance of the past as such yields a relatively independent datum which requires to be accounted for, and in some way combined with other relatively independent data in a coherent system of knowledge. However erroneous it may be in detail, it is so far true that the error is in principle capable of being corrected and accounted for. In this respect the immediate knowledge of physical existence is broadly speaking on the same footing as memory-knowledge.

BOOK FOUR

KNOWLEDGE OF PHYSICAL EXISTENCE— POSITIVE VIEW

Chapter I

THE PERCEPTION OF EXTERNAL OBJECTS

1. *Introductory*

I perceive the pen which I now see and handle as something having an existence, history, and nature independent of the course of my own individual experience, including my present perception of it. So far the pen is for me a physical object. But the total object of my perception also contains another ingredient which is not thus independent of me and my history as an embodied self. I refer to what I immediately experience in having colour sensations, touch sensations, etc. Where it is important to make the distinction, we may call what is thus experienced the *sensum* and reserve the term *sensation* for the experiencing of it. The sensum varies not only with difference and change in the physical object, but also with difference and change in the percipient's own body and with the variable relations of this body to the physical object. Thus in seeing the pen the visual sensum varies according as the percipient is or is not colour-blind; it varies, greatly, according as the pen is at a greater or less distance from the eye. In some extreme cases, as when a blow on the eye makes us 'see stars', the sensum is actually present when the sort of physical object which we seem to see is not actually before us.

I am going, provisionally, to take for granted that we can and do apprehend physical existence, without inquiring how. Postponing this inquiry, I shall deal first with the perception of external objects, where 'external' means external to the body of the percipient, and more especially to the sense-organ. It will become clear as we proceed that these two questions—that of the external object and that of bodily existence in general—are not the same, and also that they must ultimately be connected and intertwined with each other.

2. *Internal and External Perception*

Each of us, as I have already shown,[1] has ways of being sensibly aware of his own body in which no one else can be aware of it, and in which he cannot be aware of any other body. This happens, for instance, in feeling hungry, thirsty, or fatigued, or in feeling toothache, or the smart of a burn or wound, or in feeling thrills, itchings and tinglings, or when the light hurts our eyes or sound our ears. In like manner we are aware of the movement and position of our own limbs in a way which is not possible to the external observer. I call this private awareness of our bodies 'internal perception'. It is the special character of internal perception that it does not involve for the percipient himself a distinction between the embodied self and things seen or touched, and, more especially, between the sense-organ as implicated in the process of perceiving, on the one hand, and the object of this process on the other. We do not perceive an itching by touching with the hand another part of the tactual surface or by looking at it with the eye. It is otherwise with seeing and touching, hearing, tasting and smelling, and the awareness of resistance to effort. The total object apprehended by the percipient is here twofold: it includes, on the one hand, what is touched, seen, tasted, etc.; this is what is properly called the external object, and the perception of it may therefore be called external perception. On the other hand the percipient coincidently apprehends the sense-organ as such, e.g. the eye he sees with or the hand he touches with. Sense-organ and external object are apprehended as co-ordinate constituents of one total situation. What makes the external object external for the percipient is precisely that in sense-perception it thus appears to him as other than or external to the relevant sense-organ, and to his embodied self as a whole.

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[1] Especially in Book II.

But in what way are we sensibly aware of the organ of sense in the act of perceiving external objects? The answer is that the sense-organ is *internally* perceived; further, this internal perception depends for each sense in part on the kind of sense-experience which is proper to it; in the case of the eye on visual experience of light and colour; in the case of the skin on tactual sensations. Other contributory factors, in the way of organic and motor sensations, may play an important part, but this is essential.

3. *Correlation of Internal and External Perception*

In seeing another person's eyes, or our own as reflected in a mirror, what we perceive is the opaque surface of the eye with the transparent pupil in the centre of it. But we are not cognisant of our own eyes in this way when we see external objects. We are not aware of looking through a small peep-hole. On the contrary, when we remind ourselves that this is so, we find the fact difficult to fit in with our actual experience. In our actual experience, it is as if the surface sensitive to light—the seeing eye as such—directly confronted as a whole the whole visible scene spread out before it, so that the only screen which comes between us and it is the movable screen of the eyelids as we close or open them. The question is whether visual perception primarily includes such awareness—the seeing eye as such—or whether we know of it only through some sort of inference.

The experience of seeing other things certainly yields no knowledge of the size and shape of the retina or any knowledge of the distinction and relative situation of its parts, such as the anatomist has, or such as we might have if it could be laid before us on a table to be examined. None the less, we have an internal though no external perception of the eye as what we see with; to use a convenient but less accurate phrase we are aware of the seeing eye[1] as such. But this internal perception of the surface sensitive to light is wholly relative to what is seen and has no separate being apart from this. We distinguish after a fashion the parts of the seeing eye as such and also their position relatively to each other. But we do so only inasmuch as we are aware of different parts of the field of view as seen with correspondingly different parts of the visual organ. We distinguish for instance what we see distinctly with the centre from what we see indistinctly with the margin or out of the corner of the eye. We also regard adjacent parts of the field of view as perceived by adjacent parts of the seeing eye and parts of the field of view which are more or less distant from each other as perceived by correspondingly separate parts of the seeing eye. Thus there arises a natural illusion which seems otherwise inexplicable. Going beyond what is warranted by internal perception, we naturally assume that what is right and left, or higher and lower, in the field of view is seen by parts of the eye which are correspondingly right and left, higher and lower. Hence we are surprised when we learn that, owing to the inversion of the retinal image, this is contrary to fact—that, for instance, it is a lower part of the retina with which we see the upper part of an object, and an upper part of the retina with which we see the lower part of the object.

Consider the nature of the experiences expressed by such familiar phrases as the following. 'Something meets our eye' or 'our view'; 'we turn our eyes' (or, synonymously, 'our gaze') 'from one thing to another'; 'we keep our eyes on an object'; 'we pass them over it', or, as Simon Tappertit would say, 'eye it over'. Inversely, 'things pass before our eyes or our view'; as, for example, visible objects appear to rush past us when we are travelling in a railway train. When we examine what such phrases mean in terms of our actual experience, it is clear that they imply awareness of the seeing eye as such, in motion or at rest, relatively to things seen. Tactual and muscular sensations do not suffice to account for this. They yield only a perception of the position and motion of the eyeball in its socket. But this is fundamentally different from the perception of the seeing eye as at rest or moving, relatively to the visible scene which confronts it. When we close our eyelids, we still appear to have before our view a grey expanse more or less flecked or streaked with colour. If, now, we try to turn our eyes so as to look at one part of this grey field after another or bring into view what may be beyond it, we perceive with unusual distinctness the rolling of the eyeballs in their socket and the varying direction of their motion. But what is conspicuous by its absence is the experience of turning the seeing eye as distinct from the eyeball so as to explore successively the parts of the visible field. We turn our eyeballs but we do not turn our gaze. The reason is that the motion of the eyeballs makes no difference to the visual experience of the grey field.

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[1] Strictly speaking it is not the eye which sees but the embodied self which sees with it or by means of it.

Our tactual appreciation of the motion and position of the eyeballs does indeed fulfil an important function; it helps us to distinguish whether it is our eyes that are moving or external objects which are moving past them. But this is far from being the only or the most essential condition which determines for the percipient himself the distinction between active and passive seeing.[1] What is most essential is that in actively turning the gaze from this to that, it is we who initiate the change in visual experience. We begin it, continue it, discontinue it, reverse it, or otherwise vary it at will. We do not indeed determine in this way what we shall see; but we do determine whether we shall see it or not.

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[1] Experimental tests have shown that tactual-motor perception of the motion of the eyeball is very inexact, whereas our perception of the motion of the seeing eye is finely discriminative.

There remains the problem how the same visual experience of light and colour can yield, together with external perception of things seen, an internal perception of the eye as seeing them. This is possible because in visual sensation there are always two factors really inseparable, but abstractly distinguishable. On the one hand, the visual sensum varies in its nature as the retina is variously affected as a whole and in each of its parts by the light which stimulates it. In other words, it differs for each part of the sensitive surface with differences in the colour, brightness, size and shape of the things seen. It is this side of visual experience which is distinctively connected with the perception of external objects. On the other hand, the total visual experience retains throughout these changes a certain constant character, which depends not on fluctuating conditions, but on the permanent constitution of the retina and its nervous connexions. This character is different for each part of the retina, but for each part it remains constant, however variously it may be stimulated. It is this side of visual experience which accounts for our internal perception of the seeing eye and our ability to distinguish one part of it from another.

Consider what takes place when, by turning my eyes, I gradually bring something from the vague margin to the distinct centre of the field of view, or inversely. I experience a series of changes, e.g. in the distinctness of the visual sensum, which in their general form or scheme are of the same sort, whether the thing seen is a fire, a book, a tree, a teapot or a cow. Such differences, taken in their abstract generality, contribute nothing to our knowledge of things seen; they do not enable us to distinguish the visible appearance of one thing from that of another. What they yield is rather internal awareness of the organ of vision *quâ* organ of vision, as having parts with some of which we see more distinctly than with others. But mere distinctness and indistinctness cannot be experienced by themselves. They are always the distinctness and indistinctness of some specific sensum which varies according as the thing seen is, e.g., a fire or a flower-pot. As thus specified, such differences of distinctness in the sensum yield the apprehension of differences in the distinctness with which a thing is seen by the eye—not of difference in the thing itself but in its visible appearance. The visible appearance of the fire is different according as it is seen out of the corner of the eye or with the centre of distinct vision.

Touch is analogous to sight inasmuch as tactual experience has a character which varies with differences in things touched, and also a character which is constant for each part of the skin and constantly different for different parts of it. Contact with the tip of the nose is sensibly different from contact with the big toe; and it is also sensibly different according as either of these touches velvet or silk. The analogy of sight would therefore lead us to expect an internal perception of the sensitive surface of the skin as distinct from and correlated with the external object. Now it is a fact familiar to all of us that in touching something we are coincidently aware both of what is touched and of the tactual organ. It may not be so clear that this involves internal perception of the sensitive surface. This is certainly not the only condition which we have to take into account. We are sensibly aware of the shape and size of the touching hand and of the relative situation of its parts in a way to which nothing corresponds in our awareness of the seeing eye. This important difference between sight and touch is undoubtedly due to the fact that, whereas we cannot see our own retinas, we can and frequently do[1] explore the different parts of our skin by means of each other, and thus perceive both together as external objects. The knowledge, e.g. of my hand, which is thus acquired is retained and reproduced so as to be incorporated in my present percept, when my hand touches a table.

But how does my experience of the table when I explore it, let us say with my right hand, thus come to coalesce with my experience of my right hand when it is explored, let us say, by my left? The two sorts of experience must either have been directly united with each other in the past in a close and constant way, or they must have been so connected with a common factor, which thus serves to bind them together. The connexion is certainly not direct; we cannot touch our own skin when this is in contact with an object outside our body, and we have not been in the constant habit of touching it immediately before or after such contact. The complication of the two sorts of experiences with each other must therefore be mediated by a common factor which is constantly connected with both. The common factor is internal perception of the tactual organ. This is equally involved in the perception of one hand by the other and in the perception of a table by the hand. If we were unable to touch our own skins as we are unable to see our own retina, we should have the same sort of internal awareness of the organ of touch as we now have of the organ of vision. We should not indeed be in this way aware, as we now are, of its shape and size and the relative situation of its parts: we should, however, be able to distinguish perception by one part from perception by another. The distinction would further be helped by the fact that our limbs are separably movable, so that for each of them internal perception through motor sensa would concur and blend with internal perception through cutaneous sensa.

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[1] Babies are especially occupied with explorations of their own bodies.

The experience of resisted effort supplies at once the most obvious and the most important example of the experienced contrast and correlation of external object and embodied self. The same complex sense-experience conditions the perception both of the bodily effort and of the correlative resistance. Inasmuch as it is variable through our own initiative, it yields the awareness of an effort which we ourselves are making. Inasmuch as it is variable independently of our subjective control, it yields the awareness of a resisting not-self. The resistance we naturally apprehend as proceeding from a counter-effort opposed to our own. When we press one hand against another, each is external object relatively to the other, so that what for the one is effort is for the other resistance, and inversely.

4. *Dependence of Sensible Appearance on the Interaction of Self and Not-Self*

A vitally important outcome of this account of sense-perception is that the awareness of external objects is inseparable from the percipient's awareness of his own bodily action in relation to them. It is awareness of a total situation in which he is active and passive in relation to his environment, and his environment is active and passive in relation to him. By this I do not merely mean that perception guides the practical action through which we produce changes in surrounding things, and also that the primitive motives of this action consist in bodily pleasure and pains, appetites and impulses. The point that I desire to emphasise is that the process of perceiving itself is not merely cognitive. It involves at least the fundamental contrast between those characters of sensible appearance which vary regularly under our subjective initiation and control from those which do not. Perception considered as merely cognitive is therefore an abstraction. In the concrete mental life it implies continual interaction between the environment and the embodied self. This experience of interaction involves some knowledge, however rudimentary, of both the interacting factors—the embodied self and the external object; and the interplay of these factors is followed by change in prior sense-experience. There is no question of a passage from the bare sensation as effect to physical existence as its cause.

5. *The Causal View of Perception*

In this primary experience the percipient is cognisant, in the perceptual process itself, of the physical factors determining change and differences in sensible appearance—

his own body on the one hand, and the external object on the other. In this respect it differs from what Lord Balfour has called the 'causal' as contrasted with the 'cognitive' view of perception.[1] What is distinctive of the causal view is that it accounts for sense-experience and for its variable phases by reference to physical conditions which are not themselves perceived, and need not be perceptible at all. 'The sensible appearance is regarded as the outcome of a complex process occupying time and traversing space, in which all the stages except the last are physical or physiological.'[2] 'It is the active energies of the external world, including those of which the perceiver's own organism is the theatre, that mainly determine the character of the sense-data which pass the threshold of his consciousness.'[3] The external object of perception is from this point of view regarded as one of the causal conditions which give rise to the perception of it. It is conceived as the usual or normal source from which issues the complex train of physical and physiological processes that terminate in the sensible appearance as their end-product. Thus a star is said to be the external object which we see, because the star, it may be centuries ago, emitted light waves which, radiated through space, now affect our eyes and brain in such a way that we experience certain visual sensa. Sometimes, though the external object is not present as an operative factor, the sensitive organism is affected in a more or less similar way so that more or less similar sensa are experienced. When this happens there is hallucination or illusion. The drunkard sees rats though there are no rats to see.

The causal view as thus defined is peculiarly characteristic of science. But it is also found in a rudimentary way at the level of Common Sense. The plain man is quite ready to account for a disturbing dream as due to indigestion. He does not suppose that a field-glass alters the 'objective' size and distance of the thing seen: though ignorant of optics, he vaguely refers the difference in the visible appearance to the way in which the light affects his eye. Physical science, including physiology, carries this causal explanation immensely farther and gives it detailed precision. It has reached a position in which an appeal to the evidence of the senses may be treated only as raising a causal problem; the appearance to the senses is, from this standpoint, regarded as an effect from which its physical antecedents are to be inferred. The astronomer, for instance, proceeds in this way when he takes the apparent position and motion of the heavenly bodies as a datum from which their real motion and position have to be calculated by a complex train of reasoning.

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[1] *Theism and Thought*, chaps. vi, vii and viii.

[2] *Ibid.* p. 113.

[3] *Ibid.* p. 116.

6. *Possibility of the Causal View*

The causal reference of percepts, considered as effects, to physical and physiological conditions presupposes, from the nature of the case, prior knowledge of the physical world. Otherwise there would be no data for framing and verifying physical and physiological hypotheses. It is equally clear that, unless we assume, like Descartes, a complex system of 'innate ideas', the source of such data must, in the first instance, be the perceptual process itself. Hence we are confronted with the problem of showing how perceptual knowledge is primarily of such a nature as to make possible the development of the causal point of view in which the relation of stimulus and sensitive organism is substituted for that of knower and known. Any 'philosophy of perception' which fails to answer this question is so far self-condemned.

The key to the problem is to be found in the twofold way in which the individual is cognisant of his own body and also of the bodies of his fellow-men. He is internally aware of his own body in being aware of himself as embodied, in contrast to and in correlation with his external environment. He is also cognisant of this same body as one external object among others connected spatially, temporally, and causally with the others as these are with each other. The body as external object is thus apprehended by him as part of the environment of his embodied self. He internally perceives his own hand in the act of touching and his own eye in the act of seeing; but he also looks at his hand and sees it in contact with the thing touched as he may see a pen in contact with paper. Similarly he may feel his eye with his hand or, looking at it in a mirror, examine the little image on the retina. He is aware of a bruise from within inasmuch as he feels it aching; he can also observe it objectively as he would someone else's bruise.

There is a corresponding distinction between two ways of knowing the bodies of other experiencing individuals. In social intercourse we are cognisant of our fellow-men and of animals as embodied selves, and not merely as parts of the external world. But this way of regarding them is not primary as it is in our own self-consciousness. The perception of their bodies as external objects must come first: the apprehension of their bodies as embodiments of a self arises only through interpretation of the external data; and this interpretation is preconditioned by our own primary experience of ourselves as embodied.[1] Whether we consider ourselves or others, it follows that the dependence of change in sense-experience on bodily process and on the interaction between the body and its environment has a double aspect. It is primarily experienced as dependence on the embodied self and on the interaction between embodied self and external object. But it is also apprehended as dependence on the body as itself an external object in interaction with other external objects. This is the characteristic standpoint of physical science in dealing with sense-experience. From this standpoint and only from this standpoint, the physicist and physiologist can connect the variable content of immediate sense-experience with the general order of sequence and coexistence and co-variation which it is the business of science to discover. They can, for instance, explain that modification of sense-experience which we call a sensation of red as due to the reaction of the eye and nervous system when affected by light vibrations radiated from a distant source, and variously refracted and reflected in their passage to the sense-organ. Sense-organ and nervous system are for science just as much external objects as the light rays and the body from which they proceed. The sensum and the experiencing of the sensum are treated merely as occurrences which are found to take place when these or equivalent 'objective' conditions are fulfilled, and do not take place when they are not fulfilled.

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[1] I am not asserting that the whole process is adequately described as an inference by analogy.

From the purely scientific standpoint there is nothing to confine such a causal explanation merely to *change* in the content of a pre-existing sense-experience. It is found applicable to sense-experience in general, including both the experiencing of sensa and the sensa experienced. Sense-experience in general is regarded as a collateral consequence of certain processes in the organism as external object; it is determined by the environment only so far as change in the organism depends on conditions outside it. The external stimulus is supposed to elicit sensation from the living body as a blow elicits sparks from a flint. In like manner the objective view is extended not merely to sensation but to individual experience in general in all its aspects and phases. An experiencing individual is treated as if he were only one group of phenomena, though of a very peculiar kind, falling within the general order of sequence and coexistence which it is the business of physical science to investigate. What Lord Balfour calls the 'causal view of perception' inevitably follows.

7. *Inadequacy of the Causal View*

The external standpoint from which physical science treats the experiencing self and its relation to the not-self yields a systematic and comprehensive knowledge of the course of events which is of the utmost value. None the less it is only secondary and derivative. It is rooted and grounded in the primary experience of the interaction of embodied self and external object. It arises from this through the substitution for the embodied self of the body as one part among others of the external world—connected with the others only by spatial, temporal and causal relations. The relation of the knowing, willing and feeling 'I' to what it knows, wills and feels interested in, is thus lost sight of and replaced by the relation of stimulus and organic reaction. This procedure is legitimate and useful within its own province: but if, misled by the professional bias of the student of physical science, we treat it as independent and ultimate, we find ourselves plunged into a maze of insuperable difficulties.

The purely external standpoint, taken as ultimate and adequate, presupposes an initial knowledge of the external world, which, on its own showing, it cannot initially possess. The only primary way of coming by such knowledge is in and through a perceptual process. But what appears to exist in perceptual process is, on the view we are considering, not an external object but only an effect somehow generated by certain occurrences in the external world. Supposing that in fact this is true, it seems impossible that we should ever know it to be true. There is no answer to the question how we know the effect to be an effect at all: and if we do apprehend it as an effect, yet being initially without any knowledge or even any thought of external objects, we are not in a position to frame even the most vague and tentative hypotheses concerning the external conditions by which it is produced. We can only know the external world by inference from the effect of external conditions, and this very inference presupposes some prior knowledge of the external world.

What aggravates the absurdity is that the effect is supposed to be immediately produced only by processes taking place inside the body of the percipient. Hence the problem assumes the form: 'How can we pass from what exists inside us to what exists outside us?' In this shape the question will be seen to admit of no possible answer, if we avoid confusing knowledge of what is experienced as the effect of the organic process with knowledge of the process itself. As a matter of fact, knowledge of the nervous occurrences immediately connected with sense-perception and other experiences, so far from being an initial datum which may be taken for granted, is attained only by a complex and circuitous process. If we start from the purely causal point of view as conceived by science, any knowledge either of our own bodies or of external objects is quite inexplicable. The position to which we are driven is that whatever appears in our experience is inside us and forms no part of the external world. It is all crammed within our skulls and there is no way of getting beyond it so as to know even that we have skulls or to be able to think of them.

Chapter II

HOW PHYSICAL EXISTENCE CAN BE KNOWN—INTRODUCTORY

1. *The Nature and Conditions of the Problem*

Up to this point I have taken for granted that we can and do know a physical world, a world which exists, persists and changes independently of the variable content of sensation and of individual experience in general. I have assumed that physical objects are known as having the characters of extension, size, shape, relative position and motion. Not only the external object but the body as internally perceived are thus apprehended as physical.

In what way are we or can we be initially cognisant of physical existence as thus defined? This is a problem which has troubled philosophers from the time of Descartes to the present day, and none of them can be said to have found a satisfactory solution. In part their perplexity has been due to a fallacy which I have already discussed—that of starting overtly or covertly from the causal view of perception as an effect produced by physical conditions. But even where this source of confusion is lurking in the background, as it frequently is, the difficulties may be raised directly from the cognitive point of view. Such difficulties will all be found to arise from some prior assumption concerning what can and cannot be immediately known. These are based on some preconceived theory of knowledge which differs for different schools of philosophy. But theory of knowing cannot in principle be severed from theory of being. The question whether we can know this or that immediately or by inference, essentially includes the question whether it is of such a nature or so connected with our being as to be capable of being known. Hence epistemology and ontology go hand in hand. Philosophers who differ fundamentally in their view of the conditions of knowledge are bound to differ also in their view of what it is that is known, and inversely.

How are we to proceed in testing and criticising the theoretical preconceptions which have seemed to bar the way to a satisfactory account of the possibility of knowing physical existence? We may of course inquire whether they are in themselves so evident as to exclude reasonable doubt, and we may also inquire whether they are capable of being consistently followed out. But such internal criticism is not of itself sufficient. It may enable us to reject certain views as false or dubious; but it will not guide us to a view which is positively satisfactory. The ultimate test of any theory of knowledge is its success in answering the question which falls within its province. It sets out to explain how we know what we admittedly do know. It breaks down if instead of this it reaches the result that we cannot know what admittedly we do know. In that case what it has achieved is only to show that the principles on which it has proceeded must be false. Take for instance Hume's treatment of the knowledge of causal relations: if the inevitable outcome of his initial assumptions is that there can be no valid inference from one matter of fact to another, it follows, as he himself saw, that these assumptions must be untenable. A theory of knowledge can accredit itself only by its success—its success in accounting for the knowledge which it finds indispensably presupposed in the ordinary conduct of life and in science. To deny such knowledge instead of analysing its nature and conditions is suicidal. Any theory is therefore self-condemned if it logically leads to the conclusion either that we cannot know the physical world which is essential to Common Sense, or that we can know it only through a complex and precarious process of inference. It is not the claim of physical things to exist which is on its trial, but only the claim of a certain theory to account for the way in which we know of their existence or are justified in believing them to exist.

2. *Its Relation to the Knowledge of External Objects*

If my account of the distinction and correlation of embodied self and external object is correct, it must be taken as an initial datum, which may be further analysed but cannot be legitimately denied in any theory of the way in which physical existence is known. The question how physical existence is known at all emerges when we attempt to resolve this total experience into its partial factors. Difficulty and failure are bound to follow if we unduly emphasise one or more of these factors to the exclusion of others equally essential, or if we detach them from each other so as to lose sight of the unity of the whole situation in which they meet. It seems that we are somehow primarily aware of physical existence, whether that of our own or of other bodies, in and through sense-experience. But how? Are we to take the immediate content of sensation as itself physical and as constituting all that we originally know of the physical world? Or are we to regard physical existence as fundamentally distinct from the immediate content of sense-experience and primarily known as such? Whichever alternative we adopt we seem to be entangled in a maze of perplexities. Besides this there is the difficulty of accounting in terms of mere sense for the dynamical aspect of the relation of self and not-self. In concrete practical experience we are aware of them as interacting with each other. But mere sensa abstractly considered are, to use the language of Berkeley, 'visibly inactive'; 'there is nothing of power or agency included in them'. The physical existence both of external objects and of the body of the embodied self, if regarded as a counterpart of the sensum or as identical with the sensum, may be conceived as having extension and relative position, and as blue or green, hot or cold, etc. But what we positively mean by *action*, *energy*, *force*, etc. is lost. On the other hand, if we seek the key to the problem in what we experience in willing and striving, we may say that we are primarily aware of our embodied selves as active and passive in relation to an embodied not-self which is active and passive in relation to us. The drawback of this view is that it takes for granted instead of accounting for the perception of body, with its material qualities of extension, motion, etc. To explain these we must fall back once more on sense-experience; we have not really escaped the difficulty of finding a satisfactory theory of the relation of sensa and physical objects.

3. *The Demands of Common Sense, which have to be met*

It may be said that I have assumed too much in taking my own account of the way in which we are primarily aware of external objects as a datum which any theory of knowledge may attempt to analyse and reconstruct, but cannot legitimately deny. I admit that some points in my exposition may not readily win general assent. In particular what I have claimed as primary knowledge may be regarded by some critics as inferential. None the less it seems scarcely open to reasonable doubt that the external object does now in ordinary life appear in perceptual process in the sort of correlation with the embodied self which I have described. So much may be fairly set down as belonging to the Common-Sense view which Theory of Knowledge cannot simply neglect, without compromising itself. Theory of Knowledge may, indeed, if adequate reason can be shown, correct and even transform the Common-Sense datum. But what gives the Common-Sense view its working value, for the purpose of daily life, must be retained; or at least something must be supplied which can yield a really satisfactory substitute for this.

We may briefly notice here the other main demands of Common Sense which Theory of Knowledge is bound in this way to satisfy. In the first place it is bound either to reaffirm or to find a really workable substitute for the view of the physical world as a world of things existing independently of individual experience, locally separate from each other, interacting with each other, and possessing in themselves the primary and secondary qualities of matter. In the second place there is the distinction which Common Sense practically, and as a matter of course, makes between the appearance of a thing to the senses, and its own intrinsic nature which persists and changes independently of variation in its sensible appearance. In the third place, justice must be done to what, after Lord Balfour, I have called the causal view of perception, according to which sense-experience, and indeed individual experience in general, is in some way determined in the phenomenal order of nature by physical conditions: more especially by processes in living bodies and by the interaction of living bodies with their environment. This view is more especially developed in science; but it has its roots in Common Sense. I have already shown the impossibility of taking it by itself as a key to the problem with which we are here concerned. None the less any theory is self-condemned which fails to give a coherent account of it, explaining its validity and value within its own province.

4. *Its Relation to Science*

It may be thought that in thus emphasising the claims of Common Sense I fail to recognise the superior claims of physical science as an authority to which the philosopher may appeal. It is the special business of physical science to investigate the physical world. If then the philosopher on the strength of his theory of knowledge denies, for example, the physical reality of the secondary qualities, inasmuch as he finds himself in agreement with science, he need not trouble himself (it may be said) about his disagreement with Common Sense. Here I have briefly to remind the reader of what I have already said at length on this point. Science is a special outgrowth of Common Sense, as I have defined it. As such it carries forward into a higher development principles which in a more rudimentary way are present and operative in the pre-scientific stage. So far there can be no fundamental disagreement, and any theory of knowledge which finds them fundamentally discordant has missed its way. On the other hand, just because the scientific development is specialised, it is one-sided; it sets aside as irrelevant and ignores whatever does not minister to its own special interest, whatever has not for it a working value. If it is assumed to deny what it thus discards as irrelevant, there results apparent conflict between it and the whole concrete view of reality which constitutes Common Sense. But this assumption, though natural both to the man of science and to the philosopher with a predominatingly scientific interest, is a fallacy which can lead only to confusion and perplexity.

Chapter III

THE KNOWLEDGE OF PHYSICAL EXISTENCE AS FOUNDED IN SENSE-EXPERIENCE—THE SENSORY CONTINUUM

1. *Sense and Activity*

The actual experience which conditions at once our immediate awareness of the embodied self and of objects external to it is of a twofold nature. It includes in inseparable unity sensation and what we immediately experience in being active and passive—in doing and undergoing. There is no ground for asserting that either factor does or can exist entirely apart from the other: and if they could be separated, neither by itself would afford the required foothold in actual experience for the immediate knowledge of physical existence.

Each however has its own special function; subjective activity is distinctly correlated with the dynamical, and sensation with the material aspect of the physical world. Hence, while denying either to be sufficient by itself, we may, for purposes of exposition, consider separately the distinctive contribution of each as a constitutive condition of possible knowledge through experience. I shall take the sensory factor first and then say what remains to be said about activity.

2. *The Sensory Continuum*

The course of sense-experience in the life-history of an individual is only one small group of occurrences within the general order of nature and is throughout conditioned by its context within the whole of which it is part. When therefore we consider the coming and going of particular sense-impressions in abstraction from their context of conditions, it is no wonder that we find what is, comparatively speaking, a disconnected multiplicity of loose and separate items. From this point of view we may agree with Hume that there is no discernible reason which can warrant the assertion that a certain sense-impression *A* will certainly or probably be followed by another *B*, before *B* has actually occurred. None the less the view represented by such phrases as the 'disconnected manifold of sense' can only be accepted with very important reservations. In particular, there is the reservation first clearly pointed out by Ward, and expounded by him as the doctrine of the Sensory or, as he also calls it, the Presentation-Continuum.[1]

This means, in the first place, that at any moment in the course of individual experience all presentations (sensa) are parts of one complex presentation (sensum). No one of them is separated from others 'by something which is not of the nature of presentation, as one island is separated from another by the intervening sea'.[2] This simultaneous unity will be better understood when we have taken account of the second part of Ward's doctrine, the continuity of sense-experience in its successive phases.

Particular sensations do not merely succeed each other; they are changes in what Mr W. E. Johnson would call a continuant. 'At any given moment', says Ward, 'we have a certain whole of presentations...; at the next we have not an entirely new field, but a partial change within the old.'[3] There is always, for instance, while we are alive and awake, an enduring visual experience having a certain general character, which is the determinable, of which particular visual sensa, as they come and go, are determinants. We say that we cannot see when we are in the dark or with closed eyes or blindfolded. But this does not mean that visual sensation is absent; for darkness is a positive experience.

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[1] In view of Ward's comprehensive use of the term 'presentation' for all objects inasmuch as they are objects for an experiencing individual, it is necessary to say that for me 'Presentation-Continuum' is synonymous with 'Sensory Continuum'. Ward's special doctrine of the Presentation-Continuum becomes obscure and untenable unless the term 'presentation' is confined to the content of actual sense-experience, including sensory revivals.

[2] *Psychological Principles*, p. 76.

[3] *Ibid.* p. 77.

As there is a persistent field of visual sentience, so there is a persistent field of cutaneous sentience, sensibly continuous at any one moment, and variously modified from moment to moment. Similarly there is a continuous motor experience which varies in detail with the variable position and motion of the limbs. The same is obviously true of organic sentience. As regards hearing, there is probably no absolute silence to the exclusion even of 'subjective' sensations of sound.

At our present level of mental development there are several mutually distinct sensory continua disparate from each other. Each is temporally continuous within itself, but they have no such continuity with each other. How then, it may be asked, can they meet in the unity of a single sense-experience, a single consentience? How can visual and tactual and auditory sensa be part of one complex sensum? The unity is certainly not spatial. So far as the several continuants have an extensive character at all, it is distinct and separate for each of them. The visual field is not extensively continuous with the tactual field. On this point Berkeley's arguments are convincing and have never been fairly answered. The Kantian doctrine of space as an universal *a priori* Form, so far as it is valid, is valid only for physical phenomena, not for sensa as such.

If we appeal to introspection, we may find at least a partial explanation of the simultaneous unity of sense-experience in the peculiarly intimate connexion of other sensory continua with organic sentience. It is this connexion with organic sentience which gives to sensations what is called 'feeling-tone', e.g. the peculiar way, not reducible to mere pleasantness or unpleasantness, in which we feel ourselves depressed or excited, braced or relaxed by colours and sounds; the way in which we are affected in touching silk or velvet, or in scratching a pencil over a slate: or again the 'relish or nausea' accompanying definite tastes or smells.

We may obtain a more adequate account of the unity of sense-experience, if we turn from the individual to the race, and compare the different stages in the development of sentience which correspond to different stages in the biological evolution of the sense-organs and nervous system. From this genetic standpoint we find abundant evidence that what are now disparate sensory continua have been by a gradual process differentiated from a primitive continuum approximating in its nature to our present organic sentience. We have thus a satisfactory way of describing the present unity and continuity of sense-experience. It is just such a unity as it ought to be if our diverse sense continua had been differentiated without disintegration from a primitive continuum.

3. *Its Epistemological Significance*

For Common Sense and science physical facts in all their diversity and multiplicity are related to each other as parts or partial aspects of one world. There are two ways of accounting for this. It may be held that primarily what we know through experience is only a plurality of mutually independent data, which may indeed be given together or successively, but are otherwise disconnected. On this view whatever further connexion we may take them to have must be traceable to customary association or to some process of synthesis. It also follows that, so far as we depend merely on sense-experience, we can never be justified in ascribing to physical phenomena any sort of connexion or mutual dependence which is incompatible with the way in which they are originally known as loose and separate data.

The view that they are so known is based on two assumptions: (1) that the only clue to the existence and nature of physical objects lies in immediate sense-experience and (2) that sensa being primarily known as a disconnected multiplicity, the same must be true of physical objects. Accepting (1) it follows on the same principle that whatever unity and continuity belongs to sense-experience, its physical counterpart must be originally known as one and continuous in the same manner and degree. Thus if we start with a presentation-continuum it follows even from a purely sensationalist standpoint that the unity which we ascribe to the physical world is not merely due to the linking together of loose and separate items by a process of association or external synthesis.

From our own standpoint we shall find this view confirmed, and the nature of the original unity further defined, when we take explicit account of the activity-factor as well as the sense-factor as *together* determining primary and immediate knowledge of physical existence. At present I have to point out that if we consider the sensory factor by itself we reach a result which is not only inadequate but false. It is inadequate because it fails to give any satisfactory way of meeting Hume's difficulties concerning the causal relation as a principle of inference in matter of fact. Let it be admitted that sense-impressions are not self-contained existences, but changes in a sensory continuum: it still remains true that there is nothing in the nature of one particular change *a* which determines it to be followed either certainly or probably by another particular change *b*.

Though not the sole factor, sense-experience plays an essential part in our knowledge of physical phenomena. Does the fact of the unity and continuity of sense-experience in ourselves help us in any way to understand this? It is clear that physical unity is not known to us as merely a duplicate counterpart of the presentation-continuum, as it ought to be if the sole clue to the nature of the physical world is supplied by the nature of sense-experience. The immediate unity of sense-experience at any moment has no such counterpart in the unity of the physical world. To adapt an illustration given by Dr Ward,[1] what I sensate in hearing an owl screech and simultaneously seeing the moon are included within the immediate unity of one complex sensum. But the screech of the owl and the brightness of the moon, considered as physical phenomena, are relatively disconnected. They form part of one physical world; but within this world their relations to each other, spatial, temporal and causal, are not immediate but mediate. There is only one part of the physical system which may be regarded as having a unity directly corresponding to that of sense-experience, and that is the nervous process which is its psycho-physical correlate. It seems to me that there is one way, and only one way, in which we can account on the one hand for the apparent disparity between sensa and physical phenomena, as such, and on the other for their essential and intimate connexion. We must conceive the sensory continua actually experienced by individual minds to be parts of, or partial extracts from, a world-continuum which in the main is not actually experienced by the individual, or known to him as actually experienced by any other individual. It is known to him in a different way, i.e. as physical phenomena.[1] On this view physical phenomena and the immediate content of sense-experience are continuous in existence and fundamentally akin in their general nature. They are of a piece with each other. How then are we to account for their apparent disparity? Not by any differentiation of the nature of what is known, but by the difference in the way of knowing. I here recur to what I have already said on this point, more especially in Bk. III, ch. iii, section 4, where I discuss the residual truth in the Kantian conception of the transcendental object. Owing primarily to the fact that physical existence is never actually experienced, our knowledge of it is defective with a kind of deficiency which no advance of physical science is, in principle, capable of removing. So far, indeed, as physical knowledge extends, it is direct knowledge of things as they are in themselves, and not of any *tertium quid* intervening between us and them; but their full nature as they are in themselves necessarily escapes us, just because we are not in the strict sense acquainted with them, as we are acquainted with the content of our own sense-experience. We have therefore to determine in detail the character of particular objects rather by their relation to each other than by direct inspection of their intrinsic nature. On the other hand, such relational knowledge, in its own way, vastly exceeds in range and accuracy any knowledge we have of our own sensa. But the more it advances in range and accuracy, the more marked is the limitation which makes it phenomenal—the more evident is it that it is concerned with the relations of things rather than with their intrinsic nature. Science, for instance, drops the secondary qualities and considers only the primary, i.e. the quantitative relational attributes of matter. The result is an abstract schema which is evidently incapable of being actually experienced. If we suppose a mind which actually experiences the world-continuum and not merely a little bit of it, for such a mind physical knowledge would not be phenomenal. Such a mind would combine in one the range and accuracy of phenomenal knowledge with the immediacy of sense.

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[1] *Principles*, p. 49.

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[1] I am not now discussing how such knowledge is possible.

4. *Its Significance for the Psycho-physical Problem*

The doctrine of the sensory continuum has also an important bearing on the theory of the relation of sensa to their physical conditions, including more especially the nervous processes which are either their immediate concomitants or proximate antecedents. From the standpoint of physical science it is natural and even provisionally justifiable explicitly or implicitly to regard sensa as, in some way, caused or produced by physical conditions. Even the so-called parallelist who confines himself to the scientific point of view cannot help regarding the nervous process as an independent variable, and the content of sense as a dependent variable. The general difficulty of the view that sensa are produced by physical processes is that they cannot be conceived as arising through any transformation or redistribution of pre-existing physical factors—as new determinants of physical determinables. They do not seem to occur as changes in the physical world, but as absolutely new beginnings. They are thus for physical science 'epiphenomena' which follow or accompany physical occurrences but are not their outcome. This can hardly be a final and complete account of the way in which they occur. But if we regard sensa as separate and self-contained existences no other account seems possible.

It is otherwise if we start with a presentation-continuum. Let us suppose an experiencing individual already in existence. Then his variable sensa are not created out of nothing, but are successive modifications of the sensory field. What difficulty remains concerns only the process whereby physical conditions determine changes in the pre-existing sensory continuum.

But the presentation-continua of individuals are not everlasting: they come to be and cease to be, as men are born and die. From the standpoint of physical science, all that can be said is that they are found to exist when certain changes take place in the physical world, and that previously they are not found to exist. They are not themselves changes in the physical world or in anything else of which physical science can take account. Hence the event which we name when we say that they begin to be or come to be—what takes place in the passage from non-existence to existence—seems wrapped in impenetrable mystery. It can neither be observed nor imagined; and yet it must in some way actually take place.

Philosophy, which is not in principle confined by the limitations of physical science, can find a way of escape from this unsatisfactory position by the concept of the sensory continuum. The difficulty is removed if we suppose the sensory continua of individuals to be parts of a world-continuum, specially differentiated within it, and having no independent being of their own apart from it. What appear to us as the physical and physiological conditions under which they come into being will, on this view, be changes within the world-continuum, as particular and variable sensa are changes within the sensory continuum of the experiencing individual. Similarly, what appears as the dependence of particular sensa on external stimulation will really be the dependence of changes in one part of the world-continuum on changes in other parts.

The hypothesis that the sensory continuum of the individual is a partial extract from a world-continuum is, as we have shown in Section 3, in entire harmony with the seeming discontinuity between the immediate content of sense-experience and the world of physical phenomena. The dependence of the content of sense-experience on physical, including physiological, conditions is also such as, on this hypothesis, it ought to be. But the hypothesis is not only consistent with the facts; it also constitutes the only, or, at any rate, the most simple and satisfactory way of meeting a fundamental theoretical difficulty—the apparent occurrence of sensa as epiphenomena, arising out of nothing.

The alternative is simply to lump this problem, without any distinction, with the still more fundamental problem of the status of mind, and with the dependence of the existence of experiencing individuals on physical occurrences. Now I admit and maintain that these two questions are essentially interconnected and cannot in the long run be kept apart from each other. None the less, they are distinct; and to ignore the distinction between them only gives rise to confusion in the treatment of both. They are distinct inasmuch as matter and mind are distinct. In any sense in which matter can be properly distinguished from mind, the immediate content of sense-experience is not mental but material, and is so regarded by Common Sense. For Common Sense the material world includes not only physical objects but their sensible appearances. Theories which do violence to Common Sense by emphasising one of these factors to the exclusion of the other, whether by resolving matter into an order of possible and actual sensa, or by treating sensa as subjective by-products of physical conditions, break down utterly. What is required is some account of the connexion of the content of sense-experience with physical objects which will do justice to what is true in both positions, and will reconcile them, so far as they are sound, with each other.

What we need is supplied by the extension of the concept of the presentation-continuum into that of a world-continuum. Considering the material world in its properly material as distinct from its dynamical aspect, immediate sense-presentation is that partial extract from this world which is or may be actually experienced by the individual. The rest, which is not actually experienced or experienceable, is known only phenomenally. But both parts are really connected in an unbroken unity.

Chapter IV

CONTRAST BETWEEN IMMEDIATE KNOWLEDGE OF SENSA AND OF PHYSICAL PHENOMENA

1. *General Nature of the Difference*

We may and do know physical objects immediately, as well as sensa. But owing to the fact that the sensum does and the physical object does not enter into actual experience, there is a fundamental difference in the way in which we know them. The test of truth for the one is fundamentally different from the test of truth for the other. For the sensa it is direct scrutiny of the sensum itself. For physical phenomena it is the coherence of perceptual data with each other in a system. By a perceptual datum[1] I mean the probability that a thing is such as it seems to be in this or that perception taken in isolation or comparative isolation from others by which it might be confirmed or upset. The point is that it is capable of this sort of correction, and the more so the more isolated it is. In this respect the phrase 'testimony of the senses' is significant. Each perceptual datum is the evidence of only one witness which has to be tested by the evidence of others, so as to elicit a coherent view which will account in some way for the evidence of all.

On the other hand, so far as we are able to distinguish the actually experienced sense-datum from the perceptual datum we can, merely by attentive scrutiny, form judgments concerning its intrinsic nature which are not liable to be upset and do not need to be confirmed by extraneous reasons. It is a precondition of the possibility of such judgments that in forming them what the physical object seems to be is distinguished from the actually experienced sensum. There is a risk of fallacy so far as the distinction is not accurately drawn.

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[1] I call it a datum because it is founded on the given sensum. It is not inferred, but is given in perception, considered as involving, in one, sense-experience and thought or judgment. It is of course not a fixed but a fluid datum.

But we do not usually draw it at all in ordinary sense-perception unless it is forced upon us by comparatively exceptional conditions, and in the first place by illusions recognised as such. I shall therefore begin by considering how the distinction arises in connexion with illusory perception, and afterwards show that it is equally valid for perceptions which are not illusory.

It is essential to note that so far as the distinction fails to be made, perceptual judgments concern neither the physical object exclusively nor the sensible appearance exclusively, but both indiscriminately. The importance of illusion is that it brings these two factors into sharp contrast, and so supplies a means and a motive for opposing them to each other.

2. *The Difference as found in Illusions*

An oar dipped in water seems to the eye to be bent although it is really straight. If the percipient followed only the testimony of his senses in the present perception he would not only see the oar as bent, but would believe it to be so. A child might be so deceived. But ordinarily there is no deception; we believe that the oar which looks bent is in fact not bent. Why then does it seem to be what it is not? As soon as this question is raised, the answer obtrudes itself. The oar seems to be bent because we actually experience something which, as actually experienced, has and does not merely appear to have a bend in it. This is the sensum, which inasmuch as it determines what the physical object appears to be in sense-perception may be called its sensible, as distinguished from its perceptual appearance. The sensible appearance is not called an appearance because it appears to exist or to have a certain character, but because it itself directly appears, i.e. is given in actual or immediate experience, actually sensated.

What is thus immediately experienced must for that very reason be real and cannot merely seem so. It does not follow that we are cognisant of all that is thus immediately presented. For knowing involves discrimination, judgment, comparison, etc. There is always much in our sense-experience which is not discerned in detail but is only undiscriminatingly or subconsciously apprehended in apprehending the whole which includes it. Nor does it follow that our judgments concerning present sensa are infallible. They would be so if we always distinguished with sufficient precision what is immediately experienced from what is not, and more especially from the physical object as it seems to be in sense-perception. But this is in general a more or less difficult and precarious undertaking, and so far as it fails there is abundant room for fallacies of confusion. The child, for instance, draws a ship not in perspective but as he knows it to be. He has to be taught to distinguish between sensible appearance and physical fact, or what seems to be physical fact. The importance of illusions, clearly recognised as such, is that, in some cases at least, they supply a means and a motive for making the distinction with sufficient accuracy to safeguard us against fallacies of confusion in forming certain judgments concerning the nature of the sensible appearance.

Fallacies of confusion being excluded, we have in dealing with sensa an ultimate test of truth which is not applicable in questions of physical fact. How are we assured, when we see an oar partially immersed in water, that whatever may be true of the oar the immediate visual apparition is certainly not straight? How are we assured when in double vision we see, for example, two candles where only one exists, that whatever may be true of the physical object, there are at any rate two sensa? In such cases the sensum itself is its own evidence for its own existence and nature. The sensible appearance of the candle-flame in double vision gives the lie direct to the suggestion that it is single and not double. Under such conditions the percipient finds himself confronted with ultimate matter of fact which does not need to be confirmed and cannot be upset by other evidence.

This test of truth is safely applicable only under favourable conditions in judging of the nature of sensa. In judging of the nature of physical objects it is not in principle applicable at all. No doubt in every sense-perception the percipient is cognisant of what is physically real, however he may misapprehend it. But the isolated perception taken by itself as founded merely in the sense-experience of the moment supplies no adequate means of distinguishing what really is from what only seems to be. By itself it yields only a probable presumption. The bare fact that pink rats seem real to the drunkard is of itself presumptive evidence that they are real. The bare fact that the oar dipped in water looks bent is presumptive evidence that it is in fact bent. But the presumption is liable to be weakened and upset, or reinforced and established, according as the seeming fact fills its place or refuses to fill its place in a coherent context with other apparent facts for each of which there is independent evidence supplied by other perceptual appearances. Further, the coherence required is such as will make possible successful action—effective adaptation of means to ends.

Why do we believe the oar to be straight although it looks crooked? For such reasons as the following. If I try to grasp it in the water on the assumption that it is really bent I miss my aim. If it is really bent it ought to seem so to touch as well as sight; but it does not. If it was really bent how could any one row successfully with it? Again, on the assumption that the oar is as straight as it seems to be when it is out of the water, it would not become bent and unbent merely by being dipped and ceasing to be dipped.

If we ask what right we have to take for granted that the perceptual appearance when the oar is out of the water is more trustworthy than when it is partially immersed, the answer is that this depends not on any one isolated perception, but on an indefinite multitude, past and present, meeting and supplementing each other in a coherent context which guides us to effective action. What under certain normal conditions appears straight to the eye continues to behave as if it were straight on the application of other tests. The underlying principle is that physical facts are not separate and self-contained, but essentially incomplete parts of a whole within which each has its consequences and conditions more or less probable and sometimes practically certain. So far as what seems to be physical fact in each of several perceptions is a condition or consequence of what seems to be physical fact in the others, each, being founded in its own immediate sense-experience, and so far relatively independent of the others, supports and is supported by them. This is what is meant by saying they cohere. Such coherence is the warrant for our ordinary confidence in the testimony of our senses, which is really confidence in thoroughly verified hypothesis.

Procedure by way of hypothesis and verification is thus in principle common to the most rudimentary and to the most advanced stages of our knowledge of the physical world. On the other hand the incoherence of this or that perceptual appearance with its relevant context is the only positive reason we can have for regarding it as illusory.

It is important to note that the demand for coherence is not fully satisfied merely by treating the incoherent percept as deceptive. Some causal explanation of the illusion is also required. We account superficially for the apparent bending of the oar by supposing that it affects the eye differently when it is partially immersed. Science makes the explanation more exact through the optical laws of refraction. As thus explained the illusion, without ceasing to be an illusion, is brought within the coherent context of our developing knowledge.

3. *The Contrast in Normal Perception*

Under *normal perception* I include not only perceptual appearances sufficiently correct for the ordinary purposes of daily life, but also what I may call normal illusions, which occur so commonly that we take them as a matter of course.

Beyond a certain range of distance, things seem to be smaller than they really are, and the more remote they are the smaller they look. A far-away mountain, for instance, may look smaller than my hand though I know quite well that it is immensely larger. The only reason that I am not deceived is that I rely on other evidence than the direct testimony of my senses. If I relied on the perceptual appearance alone I should believe my hand to be larger than the mountain. The perceptual appearance is therefore an illusion. But it is of a normal type, which occurs whenever our vision is not limited to comparatively near objects. There is no doubt concerning the condition which gives rise to the illusion; it exists when and so far as the seeming size of things seen at different distances is determined by the real size of the relevant visual sensa. But it is thus determined only when things are so far away that they are not readily accessible for our practical dealings with them, and more especially for handling them. A book does not seem to become appreciably larger as I cross the room with my eyes fixed on it in order to take it from its book-shelf. It is also true that I am not ordinarily aware of any marked variation in the size of the visual sensum. None the less there are cogent reasons for asserting that such variations actually occur, though they usually pass unnoticed.

In the first place there are very great differences in the extent of the retinal impression, which can hardly fail to determine corresponding differences in the extent of the visual sensum. It is not, however, satisfactory to rely on an indirect presumption, however strong, unless it is borne out by introspective evidence. To obtain this we must break our inveterate habit of attending predominantly to the physical object, to the neglect of the sensum; we must attempt to direct attention to the immediate content of sense-experience rather than to the perceptual appearance of things seen.

To begin with we may effect this by artificial means. While I sit at my desk, I interpose my finger between my eye[1] and a book so that both are seen as side by side and as immediately contiguous or partly overlapping. I then find by direct comparison that the book-sensum is actually equal only to a very small part of the finger-sensum.

Having thus succeeded in clearly noticing the variation in the magnitude of visual sensa according as the thing seen is more or less distant, we may train ourselves to discern such differences, though imperfectly, without using such devices. But though they are actually experienced, they normally pass unnoticed and do not determine the seeming size of things seen. Hence there is ordinarily no such illusion for relatively near as there is for more remote objects. The perceptual appearance of near objects is the condensed resultant of past experiences in which the eye has guided the train of motor activities in reaching, grasping, exploring, manipulating, pushing, pulling, and, in general, dealing practically with our environment. Hence within certain limits of distance, things do not even look larger when they are further away or smaller when they are nearer.

This account of the education of sight in and through practical activity differs fundamentally from the Berkeleyan 'Theory of Vision'. The underlying assumption made by Berkeley and his followers is that tactual perception, in so far as it is directly dependent on tactual sensation, is, if not infallible, at any rate far more correct than the testimony of sight. But this is quite false, even if we include, as for convenience we may, the motor experiences which are ordinarily inseparable from it. A main source of the error lies in the use of the hand, and, more rarely, of other parts of the body, as instruments of measurement by superposition. What my hand covers is equal in extent to the hand which covers it. But the measurement is in principle independent of tactual or any other sensation. It would be applicable if the hand were made of wood. The isolated tactual (more precisely tactual-motor) perception, as conditioned by its own immediate sensations, has no more claim to be regarded as infallible than the isolated visual perception. For both, the test of correctness is the coherence of different perceptual appearances in a system affording guidance in the practical adaptation of means to ends.

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[1] With the other eye closed to avoid double images.

The skin varies very greatly in sensibility in different parts. If, therefore, the perceptual appearance were determined by immediate tactual sensation, the same thing would seem to be of different sizes and shapes, according as it was touched, e.g. by the finger or the back of the neck, or the big toe. Ordinarily, however, we are not troubled by such illusions. We fail to notice, or notice only very transiently and imperfectly, differences in the local sensibility of the skin. The reason is that the hands supply a common standard for tactual perception. When something comes in contact with the cheek or the back of the neck, if we want to feel more exactly what sort of thing it is we tend to touch it with the hand, or at least to anticipate what it would feel like if we did touch it with the hand. When the appeal to the hand as a standard of reference is baulked or deferred, if we are interested in the tangible object, attention is, so to speak, turned back on the immediate sensa of the moment, as the only available means of determining shape, size and motion. Hence illusions arise. The thing touched seems to be different according as it is in contact with this or that area of the skin. Something which has got into a shoe while we are walking feels different when we take the shoe off and pick it up with the finger and thumb. A dental cavity seems larger to the tongue than to the finger tip. A corn-plaster feels different according as it is applied to the thumb or to the back.[1]

The same unusual direction of attention is artificially induced in experiments expressly planned for investigating differences of local sensibility. Under such conditions the percipient is required to judge shape, size and motion through immediately experienced sensa without reference to any other criteria. So far as he succeeds in this the perceptual appearance varies as the sensa vary. If two points are kept equidistant (blunted compass or scissor points for example) so as really to describe a pair of parallel lines, the lines will appear further apart in some spots than in others. If, for example, we draw them horizontally across the face, so that the mouth falls between them, the person experimented on will feel as if they began to diverge near the mouth and to include a well-marked ellipse.[2] Motor sensibility is similarly variable with the varying motor apparatus brought into play, e.g. finger joints, wrist, elbow, shoulder, knee, and it also varies according to the slowness or rapidity of the motion or degree of exerted effort. If, for instance, with closed eyes I draw my finger very slowly across the page before me it seems to be of great breadth; whereas if I draw it quickly it seems to be relatively narrow.

If we consider only immediate tactual-motor sensation, there is no sufficient reason why the hand should be preferred as the standard of correctness to other parts of the body. Within the surface of the hand itself there are marked differences of local sensibility. The finger tips are the most delicately sensitive; but in this respect they are excelled by the lips and the tip of the tongue. What is fundamentally important is not anything peculiar to the tactual-motor sensibility of the hands, but rather the central part they play in the function of handling, the

[1] Ward, *Psychological Principles*, p. 154.

[2] W. James, *Principles of Psychology*, vol. II, p. 141.

processes directly subsidiary to this, and the practical activity which it makes possible. In our practical dealings with our immediate environment what we need is such apprehension of the size and shape of tangible objects as will guide us to efficient action. Our practical interest, being constantly and urgently set in this direction, determines the perceptual appearance so that this remains relatively constant in spite of differences in immediate sensation, just as for near objects the perceptual appearance of size to the eye does not vary as the visual sensa vary. There is however this very important difference, that we can use the hand and arm as instruments of measurement, and so have means of determining real size independent of variable tactual-motor sensation.

The process through which tactual-motor perception becomes educated so as to subserve action is traceable in young children and in those who have lost their sight in infancy.[1] One very important result of this educative process is the 'double feeling of contact' which has been so brilliantly expounded and illustrated by Lotze. It is on this double feeling of contact that all use of implements depends. 'None of them would be pliable enough for us if we were aware merely of its presence in the guiding hand, and not, with a like palpable distinctness, of its action on the material to be operated on. Only on this condition is the stick with which he gropes of use to the blind man, or the probe to the physician....Knife and fork would fail in one part of their office if we were aware only of the position of their handle in our hand, and not at the same time of the incision made in the objects by the blade and prongs....The savage rejoices that he can himself feel the blows which he deals; he would have no pleasure in another's pain if he did not directly and with the utmost distinctness feel the blows of the club on his back.'[2]

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[1] Cf. my *Manual of Psychology*, 4th ed. pp. 459 sq.

[2] Lotze, *Microcosmos*, tr. by E. Hamilton and E. E. C. Jones, vol. II, pp. 588–9.

We may add that the transition from the use of the hand or of other parts of the body to the use of external objects as implements of measurement depends in the first instance on the double feeling of contact. When a blind man touches something with the end of his stick the length of the stick furnishes a measure of the distance of the thing touched. By superposing the stick on the object he obtains a measure of length or breadth.

The relation of the hand to other parts of the tactual surface has a parallel in the relation between central and marginal vision. If anything in the margin of the field of view excites our interest this ordinarily operates only as a motive impelling us to move our eyes and head so as to look straight at it. But it is quite possible deliberately to observe the appearance of objects in the outer zones of the field of vision directly and for its own sake. We can do this under experimental conditions which secure accuracy. In this way we can become clearly aware of very great changes and differences in our sensible experience which we do not ordinarily notice or discern. As the ace of diamonds,[1] for instance, passes from the centre to the extreme margin of the field of sight, the visual sensum not only becomes more and more indefinite, but alters in colour and shape until it becomes a colourless blur. If perception of the physical object were determined merely by immediate sense-experience, the ace of diamonds would itself seem to change as the sensum changes; but we have learned to take for granted that these alterations in the sensum are due to conditions, such as the motion of the eyes, which make no difference to the independent nature of the thing seen. Our normal interest being in the physical object, we habitually fail to fix attention on these variations of our sense-experience; hence, to a large extent, we fail to discern them at all. None the less, though we do not know about them, they exist and enter into our experience.

Though there is a fundamental analogy between central and marginal vision on the one hand and central and marginal touch on the other, there are also important differences. We do not act on our environment with our eyes as we do with our hands, and we do not use our eyes as instruments of measurement by superposition. Further, whereas one part of the retina is not movable apart from the rest, the hand is movable in relative independence of other tactual surfaces. For these reasons, the transition from marginal to central touch is far from being so immediate, rapid and constant as that from marginal to central vision. Hence illusions due to its failure or delay are much more frequent for touch than for sight.

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[1] This example is used by Ward, *Psychological Principles*, p. 155.

4. *Summary of Results*

It follows from the preceding discussion that though the distinction between sensum and physical object is not noticed in ordinary perceptual experience it is none the less well founded. In particular, what the physical object seems to be—its perceptual appearance—cannot be identified with the immediate content of sense-experience in perceiving it.

It follows, in the second place, that the difference between them falls within one and the same order of existence, that of the material world. In asserting this, I rely on the following considerations taken together. (1) The fact that we do not ordinarily distinguish between them. Both are indiscriminatingly included in ordinary apprehension of material things and events. To discriminate between them requires a special direction of attention foreign to our normal attitude; and even when we do clearly distinguish them, we in general fail to disentangle them from each other with precision. (2) The only ultimate ground for drawing the distinction at all is found in critical reflexion on the process of correlating different perceptual data with each other and with our developed knowledge of the physical world. Percepts taken severally, each as it occurs at the moment, would supply neither means nor motive for distinguishing between sensum and perceptual appearance. (3) However clearly we distinguish between them we cannot separate them so as to perceive either as an independent object apart from the other. They are throughout only partial factors discernible by analysis within the unity of a total object. We are aware of the sensum only as a sensible appearance of physical existence. On the other hand there is for us no ultimate clue to material as contrasted with dynamical characters of physical objects except in the immediate content of sense-experience. Physical extension as determined by physical measurement cannot be identified with the extensiveness of visual, tactual, or other sensa. Otherwise, my pen, for example, would have two quite different sizes at once, one for touch and the other for sight. None the less we know what it is for a body to be extended only because our sensa are extensive quanta. In general, we should not know what is meant by a body being round or square, sweet or salt, hot or cold, etc., if we did not actually experience in the way of sensation something fundamentally akin to physical characters.

There is only one view which covers all the facts. It is that which has already been suggested in the last chapter on the presentation-continuum. The sensory continua of experiencing individuals are partial extracts from a wider continuum, differing from other parts of the whole to which they belong, not in their fundamental nature, but in being actually experienced by individual selves. Except on some metaphysical theory, the parts which are not actually experienced are known only as physical phenomena. Sense-impressions are changes in the sensory continuum of an individual, continued from and into changes in the wider whole. The apparent discontinuity and disparity between the sensa and physical existence which has led to the view that sensa are not material but 'mental,' is really due to a difference in the conditions of our knowledge. Physical objects are, and sensa are not, phenomena.

The present chapter also fully supports the position that the primary awareness of physical existence is awareness of the embodied self in interaction with its environment. The only ground for asserting that the perceptual datum includes more than the mere sensum is found in the process of correlating perceptual data with each other so as to guide practical activity in the adjustment of means to ends. If such practical adjustment were possible in relation to the mere content of sense-experience taken by itself, subjective sensationalism would be adequate. But as we have seen, this is not so. Hence the awareness of physical objects presupposes from the outset not only immediate sentience, but whatever besides this we immediately experience in being active.

Chapter V

PRIMARY AND SECONDARY QUALITIES[1]

1. *The Question*

Stated in my own language, the traditional doctrine is that in perceiving or seeming to perceive secondary qualities such as redness or sweetness, we are cognisant of nothing that is physically real, but only of our own sensa, whereas in perceiving the primary qualities such as shape and motion, we apprehend properties really belonging to bodies independently of our sense-experience. Sweetness, for instance, no more exists in sugar than pain in the knife which cuts us; all that we can rightly ascribe to the nature of the knife or sugar is the power of affecting our sensibility in a certain way.

Is this view tenable? If not, what difference is there between secondary and primary qualities which has led to it, and accounts for its prevalence in modern science and philosophy?

2. *No Difference in the Way in which they are perceived*

When we see a billiard ball it seems to be white or red in just the same way as it seems to be round. When we put a piece of sugar in our mouth, there is a perceptual appearance of sweetness just as there is a perceptual appearance of size. According to the traditional theory, such perceptual appearances are always entirely illusory in the case of secondary qualities and are not so in the case of primary. When there is an illusory perception of shape or size, the illusion may be corrected by assigning the true shape or size. But when a thing seems to be red, there is an illusion which cannot be rectified by saying that it is really of another colour. The orthodox view is, rather, that is has no colour at all and no quality which could be mistaken for a colour.

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[1] This chapter must be taken together with what I have said on the same topic in Book II, chap. vi, §§ 6 sq.

A doctrine which is thus in irreconcilable conflict with the evidence of the senses is and must be repugnant to Common Sense, the more so the more fully it is understood. It is in fact seriously maintained only from the standpoint of physical science and of the philosophy which one-sidedly relies on physical science. When other human interests are concerned we all think and act as if secondary qualities were physically real.

But Common Sense is much more perplexed by theories which make the primary qualities as well as the secondary merely subjective. This implies that there is some important difference between them. We have to inquire wherein this difference consists, and then to decide whether it is such as to warrant us in holding that the primary qualities really do and that the secondary do not belong to bodies.

3. *Perceptual Appearance is Variable for Both*

'Whereas it is impossible', says Locke, 'that the same water should be at the same time...both hot and cold, it appears at the same time cold to one hand and hot to the other.'[1] Locke infers that the water *itself* is neither hot nor cold. It seems one or the other only because it is capable under variable circumstances of producing in us a sensation of heat or a sensation of cold. We have here a typical illustration of the main line of argument followed by those who deny that secondary qualities can be physically real. Their reason is that the perceptual appearance is different under different conditions of perception independently of difference in the physical object.

It follows that if, as they maintain, the primary qualities really do belong to the physical object, the same size or shape, for example, ought for sense-perception to seem the same. Otherwise the distinction which they make between primary and secondary qualities is destroyed, and they would, in accordance with their own principle, refute one essential part of their contention in establishing the other. Locke recognises the logical position when he says that a figure never produces 'the idea of a square by one hand which has produced the idea of a globe by the other'. But he does not examine the question. He simply takes for granted that there are no such variations in the perceptual appearance in the case of primary as there are in that of secondary qualities. As we have seen, this is quite untrue. Size, shape and motion appear different under different conditions of perception, just as colours and sounds do. The reason why this is so frequently overlooked is that it is taken for granted as beyond dispute that the primary qualities must be physically real, and that therefore they cannot appear variably to sense-perception.

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[1] *Essay*, bk II, chap. 2, § 4.

If we ask why their physical reality is indisputable, the answer is that otherwise the whole causal order of nature as known to Common Sense and science would vanish. In particular, we could give no account of the 'production' of sensations in us by physical conditions; for if neither the primary nor the secondary qualities are physically real, there are no physical conditions which could produce sensations in us. The argument is cogent. But if the primary qualities are physically real and if none the less their perceptual appearance is variable, it follows that such variation is consistent with physical reality, and cannot therefore suffice to prove that the secondary are merely subjective. It does not of itself supply any means of distinguishing the primary from the secondary.

4. *There is a Difference in the way Perceptual Data are correlated with each other*

We learn to correlate perceptual data with each other by finding relatively fixed or 'objective' values for the qualities of physical objects independent of their shifting perceptual appearances. This holds to a certain extent for the secondary as well as for the primary qualities. But there is an immensely important difference in our power of defining what the objective values are. For the secondary qualities, our means of defining what the objective values are is very limited in range and accuracy. For the primary it is in principle unlimited.

One mode of procedure common to both is the only one possible in dealing with the secondary qualities. It consists in treating as objectively valid selected perceptual appearances occurring under certain roughly ascertained standard conditions. What seems red or blue to a normal eye, within the area of distinct vision and in ordinary daylight, is taken to be really red or blue. If it seems different to the colour-blind, or in marginal vision, or in twilight, we treat the appearance as illusory. In selecting standard conditions we are guided by the demand for a coherent order enabling us to foresee and actively to control the course of events in our environment. For men living in society and co-operating with each other in thought and action, it is of vital importance that the standard shall be as far as possible common to the members of a community. Hence if a man sees differently from his fellows he is commonly assumed to be wrong. But the appeal to the majority is not final even when the majority is overwhelming. For an individual may claim exceptional acuteness, e.g. in the perception of colour differences, and justify his claim by superior foresight and greater efficiency. His colour vision is then recognised as authoritative rather than that of ordinary persons. He has the same sort of advantage which a man gifted with sight would have in a community of the blind. The perceptual appearances of the secondary, like those of the primary characters, though not to the same extent, may be corrected by acquired knowledge. Thus we have learned perceptually to distinguish, in some degree, between the colour of a reflecting surface and the colours of the objects reflected in it.

In determining objective values[1] by reference to a standard perceptual appearance, we are defining them through their relation to ourselves as percipients. The cardinal difference which marks off the primary qualities from the secondary is that we can determine their objective values not only in this way, but also by relations which physical objects have to each other independently of their variable appearance to our senses. There are two orders of relation which are of fundamental importance; and these must be regarded not separately but as mutually supplementary to each other. The first is the general causal order of the physical world. The second is involved in measurement by superposition.

Only objective values are operative as conditions determining the course of physical events, so that differences in them can be counted as involving, according to general principles, differences in their physical antecedents and consequences. But in this respect there is a vital difference between the primary and the secondary qualities, which becomes more and more marked as our knowledge of the causal order advances in range and accuracy. It is only in terms of the primary that we can formulate a system of universal or relatively universal principles or 'laws of nature' under which we can subsume limited and special empirical rules. This difference is found even in ordinary pre-scientific experience. One ball does not *ceteris paribus* behave differently from another when we push it, because it is red and the other blue; but a square body behaves differently from a round one just because the one is square and the other is round. But it is only at a relatively advanced stage of scientific research that the need arises for deliberately formulating the distinction in its full generality, as it is formulated and practically applied by Descartes in his mechanical view of nature. From this standpoint, it is only the primary qualities which are traceable as operative factors in the executive order of nature in general. The secondary are of value only as signs of the presence of the primary. To take a Cartesian illustration: How are we to explain the fact that a flame consumes wood? To explain is to exhibit what takes place as a special case of wider laws, and ultimately of laws which hold for the physical world in general. If we consider the secondary qualities, e.g. the sensible heat of the flame, no advance is possible. The Forms and occult qualities of the schoolmen, as Descartes urges, do not help us at all. But if we regard the process as one in which motion in the particles of the flame determines motion in the particles of the wood, separating them from each other, this explanation is, in principle, possible. For there are laws of the highest generality regulating the motion of bodies, and all transition from one special configuration to another can be accounted for, in principle, by a special application of these laws to special conditions. Only the primary qualities are found to have objective values which count as causal factors in the executive order of the physical world in general. But how are we to define what these values are? The method of selecting standard perceptual appearances is, by itself, quite insufficient; for in it we are still confined within the limits of sense-perception. But our scientific and even our pre-scientific knowledge of the general causal order indefinitely transcends such limits both in range and precision.

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[1] By *values* I mean values of a variable—the variable size, shape, motion or other general characters of material objects.

Nor will the causal test work by itself. It is inapplicable unless it is taken together with measurement by superposition, and the other more indirect modes of measurement which ultimately presuppose measurement by superposition. On the other hand, measurement is itself continually being tested and corrected, as it succeeds or fails in enabling us to foresee and control the course of events in accordance with the general order of nature. Coherence is thus always the ultimate criterion. Progress in our knowledge of the causal order also makes possible an ordered way of measuring conditions by their consequents or accompaniments, which are more readily accessible and precisely determinable. In this way, for example, we ascertain degrees of temperature by the height to which a column of mercury rises in a glass tube. However far such indirect methods may be carried, it still remains true that they are finally founded on measurement by superposition, and that the most primitive instrument of this is the body of the individual and more especially his hands. It still remains true that the ultimate test of their accuracy is the coherence of the results reached by means of them.

It is because the primary qualities are extensive *quanta* that they are capable of being thus measured relatively to each other. But the nature of extensive as contrasted with intensive quantity is not by itself a sufficient condition. It is also necessary that different extensive *quanta* should be part of one extensive system, within which they have position, distance, direction and motion relatively to each other. I do not deny that various forms of spatial unity are conceivable and that decision between them rests on the test of coherent causal explanation. But on any view there must be one spatial system. So far Kant is justified in treating space as an *a priori* condition of knowledge through experience.

5. *The Secondary Qualities are Physically Real*

We have now shown that the secondary qualities are distinguished from the primary by most important differences. But there is nothing to warrant the traditional view that they qualify only our own sensa and not physical objects.

There is nothing to overthrow the original presumption to the contrary derived from the fact that both are primarily perceived in the same way as physically real: that for sense-perception an orange seems yellow just as it seems round. Both are equally variable in their perceptual appearances. If, in spite of this, the primary qualities really qualify physical objects, so may the secondary. All that follows for either is that if they are physically real, they are not actually experienced as sensa are; in both cases, therefore, their relatively objective value as contrasted with their shifting appearances is determinable only through their relations to each other or to our embodied selves. In its crude beginnings, as well as in its ripest scientific development, our knowledge of the physical world moves within the realm of relativity: there is no logical or psychological discontinuity between the outlook of Einstein and that of the baby learning to see and handle the things which surround it.

There remains the argument that inasmuch as the general causal order of the physical world can be traced and formulated only in terms of the primary qualities, the secondary cannot be real at all, but must be regarded as merely qualifying our sensa. They can hardly, it may be urged, have physical existence without contributing to determine and without being determined by the course of events within the physical world. I admit that this reasoning would be cogent if it could really be shown that the secondary qualities do not enter as conditions or consequences into the general causal order of nature. But this is just what has not and cannot be proved. All that the most uncompromising adherent of a mechanical view of nature can legitimately maintain is that we, from our point of view, can trace and formulate the general order of physical phenomena only by taking account of the primary qualities and ignoring the secondary. But inasmuch as physical objects are not actually experienced as sensa are, our physical knowledge, more especially our scientific knowledge, is always in this respect essentially inadequate, relative, and schematic—in a word, phenomenal. The general order of phenomena may be traceable only in terms of the primary qualities; it does not therefore follow that in physical process as it is in itself so-called secondary qualities play no essential part.

Here an obvious difficulty presents itself. If secondary qualities are physical, real and operative, how is it possible to ignore them and work out a systematic and apparently self-sufficient account of the causal order without them? The answer is, such 'mechanical' explanation is sufficient only on the assumption that secondary qualities are excluded as being merely subjective. If they are physical, they fall outside the order of nature as known to us phenomenally in terms of the primary qualities. We must therefore suppose that, in a way which we cannot phenomenally trace, change in the secondary qualities is always determined by change in secondary, not in primary qualities, just as change in the primary is always determined by change in primary, not in secondary qualities. If this meant that there are two separate series of occurrences merely going on side by side, without essential connexion with each other, the hypothesis would be wildly untenable. But no such absurdity is involved. *Ex hypothesi* the two series do not causally determine each other—they do not interact. But this is possible only because there is a more ultimate connexion.

'I desire any one', says Berkeley, 'to reflect and try whether he can, by any abstraction of thought, conceive the extension and motion of a body, without all other sensible qualities. For my own part, I see evidently that it is not in my power to frame an idea of a body extended and moved, but I must withal give it some colour or other sensible quality....In short, extension, figure, and motion, abstracted from all other qualities, are inconceivable.'[1]

Taking for granted that all other qualities only qualify sensa, and therefore can exist in the mind alone, Berkeley cogently infers that the same must be true of extension, figure and motion. For us this reasoning has to be reversed. The primary qualities being physically real, it follows that the secondary must be so as well. It also follows that throughout the physical world the primary qualities are, by their intrinsic nature, so inseparable in existence from the secondary that they cannot have the mutual independence which is presupposed in interaction. They are only distinguishable as abstract aspects of one concrete fact. In the course of natural process they may vary concomitantly, but do not causally determine each other. The objective value of what perceptually appears as 'red colour' is a secondary quality of the physical object, inseparable from the reflection of light in a certain wave-length. The physicist has no means of determining with sufficient precision what such qualities are, so as to connect them and their changes with each other in a coherent system. Hence he substitutes for them their equivalent in terms of the primary qualities, and reserves for these alone the title of 'objective'.

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[1] *Principles*, § 10.

The reason is that differences in size and shape are quantitatively definable by measurement, and calculation based on measurement, and in principle there is no limit to the accuracy with which these objective values are thus ascertainable, e.g. millionths of millimetres. On the contrary, in dealing with what appears to us as red colour, we have no means of defining its objective value except by reference to some standard perceptual appearance, which depends directly or indirectly on the nature of the sensum. We are thus confined within the limits of our own sensibility. But this is a limitation of our phenomenal knowledge, not of the nature of things. We have no right to assume that what seems red in a standard perceptual appearance has a quality resembling the red sensum, or, indeed, any other colour-sensum; and we have no means of determining in fact or conceiving in thought what the quality is by reference to a relatively constant standard independent of perceptual appearance. But this is a limitation of our knowledge, not of the nature of things.

Are we justified in holding as more than a speculative possibility that the physical world is thus everywhere characterised by secondary as well as primary characters? I have so far referred only to one reason. I have relied on the Berkeleyan thesis that, by their intrinsic nature, size, shape and motion are abstractions incapable of existing by themselves, apart from other qualities. But is this really evident? *Primâ facie* it seems to be so, and closer examination confirms this first impression. Shape, size and motion are what Descartes calls modes of extension. Extension is the determinable of which they are determinants. But bare extension is an absurdity. It would be extent without anything extended; it would be a quantity which is a quantity of nothing. It would be a whole in which the nature of the parts is entirely constituted by their relatedness to each other, so that the question what it is that is so related has no answer.

I cannot see any satisfactory way of meeting this difficulty: but even if we set it aside, we encounter others equally grave. The whole theory rests on the prejudice that whatever factors do not enter into the systematic order of nature as traced or traceable by physical science have therefore no physical existence. But on the same principle we are bound to reject every possible form of the animistic view of nature. Hence, in making the existence and origin of secondary qualities dependent on the existence and origin of individual minds, the theory encounters all the difficulties of metaphysical materialism. And even apart from reference to mind, it remains inconceivable that colours, sounds, smells, etc. should arise merely as the outcome of change in relative position and configuration.

We have no right at this point to talk of 'final inexplicabilities' and demand that the facts as we find them shall be accepted without further inquiry. We have found no such facts. On the contrary, we have, in the language of Berkeley, ourselves 'created a dust, and then complain that we cannot see'. The whole trouble arises from the attempt to confine the concrete fullness of physical nature within the limits of our abstract, relative and schematic knowledge. Otherwise there is no reason why the physical world should not be pervaded through and through by secondary qualities, however inadequate may be our means of distinguishing in detail what they are. There is then no discontinuity between colour, sounds, etc., as immediate contents of sense-experience, and their physical and physiological conditions. On the contrary, they are integral parts of one comprehensive continuum, including what we apprehend phenomenally as the physical world considered in its material as distinguished from its dynamic aspect. And our sensa themselves, being part of this world-continuum, are not properly called 'mental' in any meaning of the word 'mental' which would be consistent with their being also material.

No other view fits in with the part played by sense in the knowledge of physical objects as ultimately based on sense-perception. If sensa were merely 'mental' modifications produced in the mind by physical conditions fundamentally disparate from them, physical objects could be known only as being causes of effects which *ex hypothesi* yield no clue to their nature. But physical objects are primarily perceived as characterised by characters derived from the immediate content of sense-experience.

In this respect there is no distinction between secondary and primary qualities. As a piece of sugar perceptually appears to be of a certain size and shape, so it appears to be white and sweet. In both cases perceptual appearances are capable of being corrected by the test of coherence. But the coherence or incoherence is always ultimately the coherence or incoherence of perceptual appearances with each other. The presupposition is that perceptual appearance as such is not fundamentally false. The only important difference, and it is exceedingly important, between the secondary qualities and the primary is that, for assignable reasons, the test of coherence can be applied in a thoroughgoing way to the primary and only in a very limited way to the secondary.

Chapter VI

THE ACTIVITY FACTOR

1. *Activity in General*

Activity is not itself a process, but a character which different processes possess in very variable degrees. It is that character which gives to a process the unity of an action, as contrasted with a plurality of separate occurrences assumed to compose it by their temporal and spatial juxtaposition. So far as a process is active, events within it have no loose and separate being apart from it. They exist only as stages or phases of it. Hence there can be no question concerning a causal nexus between them. It is the unity of the whole process which unites its partial stages and phases. We do not besides this need ties or bonds to fasten them together. If any given process were a self-complete unity, there would be no occasion to look beyond it for causal conditions of what takes place within it. But no process which we can investigate is self-complete. We can deal only with partial processes which are comprehended within a wider whole, and have no separate and independent existence apart from this. It is true that reason seems ultimately to demand a self-complete unity. I am not concerned in this volume with the question whether this demand is warranted, and if so, whether we can say anything intelligible and useful concerning the way in which it is fulfilled. For the present, we may regard the concept of a completely active process as an ideal limit or, in Kantian language, a Regulative Idea. The progress of our knowledge can never reach it, and can never stop short of it.

We may illustrate the conception of activity as a principle of unity by contrasting it with Hume's account of what happens when the motion of one billiard ball is followed by the motion of another. He distinguishes three events as if they were natural units, the motion of the first ball, the collision, and the subsequent motion of the second. These events, he insists, are existentially loose and separate from each other. But he fails to apply the same sort of analysis to the internal constitution of the events themselves. If he had done so, he would have found that each crumbles into loose and separate component events, and these again into others, and that the regressive analysis reaches a limit only in what is not an event at all. The motion of the first ball as a change of its position relatively to the second breaks up into a series of successive motions, each loose and separate, and these again into yet others similarly loose and separate, until an ideal limit is reached, in which there is no motion but only relative position. This instantaneous cross-section would, on Hume's view, be exactly the same for the case in which bodies are changing their relative position and for the case in which they continue at rest relatively to each other. The whole process can be regarded as one event, and not merely as a juxtaposition of quite independent events, only so far as there is an actual tendency for one ball to change its position relatively to the other within the frame of reference constituted by the surface of the billiard table. The conception of an instantaneous cross-section, if permissible at all, will then include not merely relative position but an instantaneous tendency to change of position. It seems plain that Hume in treating the motion of the first ball as one event was tacitly assuming it to continue in motion, when once started, through its own momentum. He is thus surreptitiously introducing the very concept of actual tendency which he ought rigidly to exclude if he is to be consistent.

But if we take this view there ceases to be any justification for regarding as three quite loose and separate events the motion of the first ball, its collision with the second, and the subsequent motion of the second. The meeting of the two balls occurs as a stage in the development of previous change: the interaction between them, and what follows it, occur as developments of the whole spatio-temporal situation and of the tendencies inherent in it, reinforcing or counteracting or otherwise modifying each other. Further, the whole situation cannot be confined to the billiard table and the balls. This is only a partial extract from a more comprehensive spatio-temporal and causal unity. If we posit a self-contained unity this can only be found, if at all, in the concept of the self-contained universe of being which includes all that is.

2. *Immanent and Transitive Action*

So far I have considered only immanent action. This consists in the unity of the process so far as it tends to continue and develop itself. But this is a complex unity including a plurality of partial factors. In consequence of the unity of the whole as a *fundamentum relationis*, these partial factors are related to each other in the way of interaction, e.g. the interaction of the colliding billiard balls. The partial factors interact only so far as, each in its own way, they enter into and share in the whole process. We may with equal accuracy describe interaction as taking place between partial processes within a total process. Process is change, and there cannot be changes without something which is in some way changing. But that which changes cannot be active either immanently or transitively, unless it is already changing or tending to change, or to maintain itself relatively unchanged. Special modes of interaction are grounded in the special nature of some special process which includes the interacting factors. For instance, the interaction of the parts of a living organism as such is founded on the whole process of organic life. But we must remember that all distinct special processes are partial phases of the world-process, and that it is in this that the ultimate ground of all transitive action is to be sought.

It ought now to be clear that certain doctrines which have come to be associated with the use of the term 'activity', and have led many to regard the whole conception as mysterious and untenable, are not implied but expressly excluded in my account of active process. I have no use for indwelling forces or entelechies, belonging to individual things or selves independently of the whole of which they are parts or members. It is wrong to ascribe to the earth, as its exclusively private property, an indwelling force whereby it attracts a falling stone, or itself tends to move towards the stone. The fundamental fact is that the physical system, of which both stone and earth are members, is such that they tend to approach each other. As earth and stone are distinct and different members of the system, each shares in this common tendency in its own manner and degree. But it belongs to neither except as share-holders. Similarly I may exercise the function of keeping a shop, and in so doing I am active in a distinctive way. But keeping a shop and the qualities implied in it are possible only within a community. In general, the value of the conception of active process is that it saves us from the Humian view of nature as ultimately consisting in loose and separate events. But nothing is gained if we substitute for loose and separate events loose and separate active processes. This holds not only for the physical world, but for the striving and willing of experiencing individuals. At this point we pass from the introductory discussion of activity in general to a question which is vitally relevant to the problem of the perception of physical objects. We have to inquire how far and in what way the knowledge we have of ourselves as active is connected with the knowledge of other things.

3. *The Doctrine of the Projection of the Self*

The conception of active process is most clearly illustrated by the striving of experiencing individuals towards the fulfilment of interest and the attainment of ends. The reason is not only that the striving individual has an immediate experience without which he could not know at all what it means to be active. There is also continuity of interest. The individual has some prenotion, however vague and inadequate, of what is required to fulfil his own active tendency. He has some cognisance of the end he is aiming at, which serves in some degree to guide him in the pursuit of it. Such direction to ends gives to the successive stages of the process, whether relatively successful or unsuccessful, the unity of a single action, and unity of this kind, unity and continuity of interest, is essential to the unity and identity of the individual experience.

I agree with those who hold that we know external objects only in knowing them as active and passive in relation to ourselves and to each other, and that this would be impossible unless we were primarily aware of ourselves as doing and undergoing. But I quite disagree with the form in which this doctrine is generally maintained. Its exponents seem to me to state their case in a way which is fundamentally wrong. They distinguish two steps: (1) They suppose that we begin by being independently aware of ourselves. (2) They then assume a further process of analogical inference or 'interpretation' which accounts for the course of sensory experience by positing other individuals of a nature in principle like our own, as interacting with us and each other. Thus what would otherwise be merely an order of actual and possible sensations becomes for us a transaction between ourselves and a world of independently existing things apprehended under the categories of substance and causality. We apprehend them under the category of substance in ascribing to them a unity and identity resembling our own. We apprehend them under the category of causality in ascribing to them an activity resembling our own.

This theory, as I have said, seems to me quite untenable, and I am vitally interested in distinguishing it from my own. It is characteristic of Monadism, to which it logically leads. Its most recent exponent is James Ward, who works it out with a care and thoroughness peculiarly his own.[1] He distinguishes several stages of development, in principle distinct, however they may chronologically overlap. In the first place, there is *purely* individual or 'immediate' experience, in which the individual is confined to his own sensa and feelings, and has no cognisance of independently existing things or of other selves. Even at this stage he is active. The next step is that he finds his actions conditioned and limited in ways which can only be interpreted by assuming other active selves interested in what he himself is interested in. As this interpretation proceeds on the analogy of his own existence as an experiencing individual, it is a 'projection of the self.' Ward illustrates by the case of several men contending for the same loaf of bread. This is the stage of intersubjective intercourse. It involves the recognition of other selves as members of a society, or at least the rudimentary beginning of a society. But it does not involve the recognition of other things, e.g. the loaf of bread, as independently existing in the way that the individual himself and his fellow-men exist. None the less such things as the loaf do acquire a certain 'objective' character, in the process of intersubjective intercourse. What each individual immediately perceives in seeing or touching the loaf is just sensations, which as such fall entirely within his own private and incommunicable experience. But intersubjective intercourse is possible only so far as such experiences, which in their particular existence are private, have a common character that is the same for many percipients. These universal features or aspects are regarded as 'objective' in the sense that they are independent of any one percipient, though not of all collectively. In reference to these common features, there are regular correlations between the particular experiences of different individuals which supply a basis for interaction between them. One man cannot enjoy the experience of eating a loaf without debarring others from the experience of eating the same loaf. Hence they may contend with each other for this enjoyment. In and through transactions of this sort intersubjective intercourse advances in range and complexity. The individual becomes increasingly aware of other individuals, such as he himself is, helping or hindering him. He thus becomes a member of a complex society, capable in manifold ways of co-operation and conflict with other members, on the basis of mutual understanding. On the other hand, as an immediate and inevitable consequence of intersubjective intercourse, there follows a further projection of the self, whereby he apprehends some objects of social co-operation and conflict as existing independently of him, in the same way as other individual selves exist independently of him.

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[1] *Naturalism and Agnosticism*, vol. II, pp. 164–70. The Monadism which is the logical outcome of this doctrine is expounded in *The Realm of Ends*.

Two men cannot contend which of them is to enjoy the experience of eating a loaf unless it is, in some sense, the same particular loaf concerning which the conflict arises. But according to Ward, they do not initially know it as the same particular loaf. They discover this only through the conflict itself. Further, when they do make the discovery, the particular object which is common to both is not really what is ordinarily called a loaf of bread. What is ordinarily regarded as a loaf is supposed to possess sensible characters such as shape, size and colour, which belong to it independently of its being perceived. But Ward holds that *particular* sensa fall entirely within the private experience of individuals. Only *general* features of the content of sense-experience can be common to more than one percipient. Hence what is and is known as the same particular existence for both *A* and *B* cannot be the loaf as sensibly present to them both. Its independent existence can be apprehended by them only through the analogy of their own, as distinct members of a community. The difference is that with it there can be no mutual understanding and therefore no intersubjective intercourse, but only interaction. The inevitable result, as Ward himself clearly saw, is Monadism. What exists beyond me and my private experience consists in nothing but other experiencing individuals fundamentally akin in nature to myself, though of varying degrees of perfection. Some of these are so developed that they can enter into social relations with me and with each other. The rest constitute what appears to us as the material world, but is really not so.

4. *Criticism of Projection Theories*

In primitive stages of culture, men ascribe to things that are not selves an individual selfhood akin to their own. This is an anthropomorphic fallacy incident to a relatively crude form of the animistic view of nature. But it is quite another question whether it is through such projection of the self that the individual is originally cognisant of whatever exists beyond what is assumed to be originally his own private incommunicable sensations and feelings. As against this doctrine I maintain that there can be no projection of the self unless there is already knowledge of existence beyond the self. More definitely, there must already be some knowledge of bodies including the individual's own and bodies external to it.

Consider first the logical outcome of the projection theory. This is in sharp contrast with the Common Sense of mankind. For Common Sense, and even for physical science, the independent existence of physical objects includes the independent existence of such characters as shape, size, relation, position and motion in space, to say nothing of secondary qualities. But this, according to the projection theory, is an illusion. They are in fact only monads which have no shape or size or spatial position and motion. The theory may none the less be right. But such a fundamental and thoroughgoing conflict with Common Sense constitutes a strong initial presumption against it, which can only be removed (1) by showing that it is the sole tenable view, and (2) by showing how the illusory belief has arisen. With (1) I shall deal presently. The best attempt to satisfy the second condition has been made by Ward.[1] The fallacy, according to him, consists in a confusion between two meanings of 'objective'. General characters and relations common to the sense-experience of different percipients are discovered through their intersubjective intercourse. These common characters and relations, owing to their generality, are independent of each percipient taken separately, but not of all collectively. But they come to be regarded as independent of all collectively by a fallacy of composition. What is independent of each is for that reason taken to be independent of all. To use Ward's own illustration, it is as if one should assume that because a meeting of the House of Commons can take place when some members are absent, therefore a meeting can take place when all members are absent. The illustration is lame because in fact no one does suppose that there can be a meeting of the House of Commons if no members of it meet. The supposition is obviously absurd. But ought we not to be debarred by a like absurdity from taking what *ex hypothesi* are originally known to us only as general characters common to the sense-experience of different individuals, as particular existences independent of all?

Some further explanation is required assigning a special motive and occasion for the confusion. Ward finds this in a supposed process occurring in early stages of intersubjective intercourse which, following Avenarius, he calls *Introjection*. In the situation which we should now describe by saying that *A* and *B* both see a tree, *A* is aware of *B* as having certain sensations resembling his own. These sensations which *A* ascribes to *B* are for *A* distinct from and independent of his own. The first step in introjection is that *A* transfers his own point of view to *B*. He thinks of *B*'s sensations as distinct and independent of *B*'s private experience, in the same way as they are independent of his own. At the same time he also continues to regard *B*'s sensations as private to *B*. He resolves this contradiction by doubling what is in reality single. He sets over against each other, on the one hand, *B*'s private sensations, on the other, a duplicate of them which he thinks of as an object external to *B*. He then regards *B*'s sensations as corresponding to or representing this external object. Finally, he returns from *B* to himself and is led by analogy to make the same distinction between his own sensations and their external duplicates. This doctrine does not, I think, require lengthy criticism. There is no evidence that the natural man ever does entangle himself in the complicated web of fallacies covered by the term *Introjection*. There are no assignable reasons why he should do so, and every reason why he should not. Why, for instance, should *A* treat what in intersubjective intercourse he knows only as *B*'s sensations, as being something else external to *B*, and this in spite of the fact that he still continues to know them as *B*'s sensations? The whole doctrine only serves to show what desperate expedients are needed if we are to make a serious attempt to adjust monadism, based on the projection of self, to Common Sense. If Ward's reasons for monadism were cogent, they ought to have convinced everybody as well as certain philosophers. The man in the street ought to be a monadist.

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[1] I need not consider the explanation of Leibniz, founded on a doctrine which no one, I presume, would now maintain, that sense is confused thought.

We have yet to consider the alleged process of projection itself, considered as a step whereby we pass in the first instance from our own existence to the existence of other things. Is there any evidence for it, and is it from the nature of the case possible? The theory is that we start from a separate acquaintance with our own sensations and feelings, and then interpret what takes place within our private experience so as to become cognisant of physical objects and other selves. Any such view seems to me to be barred by difficulties, which taken together seem insuperable. In the first place, we cannot make intelligible the supposed stage in which an active individual self is confined to his own private experience. *Ex hypothesi*, he must be active; for it is only through his own action that he is assumed to become aware of the existence of other beings. But we have no conception of the action of an individual self except as essentially including transactions between him and other beings which appear to him as bodies and embodied selves. In being aware of himself as active he is already aware of an independent not-self with which he interacts.

Why then should we assume that originally the individual is aware of himself as active within his own private existence, so that if at this stage he could form a philosophical theory, he would be a solipsist? The reason which weighs with Ward, Berkeley and others who take this view is to be found in what I regard as a radically false conception of what it is to be active. They start from the perfectly correct position that the unity and identity of the individual essentially involves his activity. Hence it follows that his action must be distinctively his own, and not that of anything else. But at this point they take a step which seems to me unjustifiable. They assume that because the individual's activity is his own, it must belong to him, not as a member of a whole within which he has his own distinctive place, but separately and independently. They regard him as a 'free cause' in the sense in which Kant defines free causality. If, holding this view, we also conceive the activity of the self as an active tendency pervading and connecting the stages of the concrete course of individual experience, the logical outcome is the Leibnizian conception of monads as entirely self-contained, so that they cannot interact. But every monadist except Leibniz holds that interaction between monads really takes place, and must therefore be in some way possible. Hence, if they are to be consistent, they cannot agree with his account of activity. For them the activity of the self is not the active tendency of a concrete process including within it as partial factors the contents of sense-experience and, in general, what Ward calls presentations.

Hence arises the view, that there is a pure activity which is itself a process, an action exercised by a pure ego upon presentations as its objects. Such action is called by Ward *Attention*. According to him, it is through Attention that the sensory-motor continuum becomes progressively differentiated and integrated, while remaining throughout quite distinct from the pure ego and the action of attending. The image which Ward's view suggests to me is that of the water from a hose playing upon, and gradually moulding into shape, a mass of plastic material.

According to Ward, the pure ego is also passive. In acting upon presentations, and just because it acts upon them, it is agreeably or disagreeably affected by them. Being pleased or being pained constitute its passivity, and are contra-distinguished from presentational experience in the same way as the activity of attending.

It is in Ward that we find the most thorough and consistent development of the general theory that the activity of the individual falls primarily within his own private existence, independently of the world-process. But in whatever special form this theory is held, it carries with it the implication that the individual may know himself as active and passive without going beyond his own private experience; also that such knowledge of his own self-activity is at least a logical, if not a chronological, precondition of the knowledge or even of the thought of other beings as active or passive in relation to each other. In other words, the knowledge of an independently existing not-self is due originally to a projection of the self. As against this, I urge that we are not originally cognisant of ourselves as active and passive at all except in connexion with existences distinct from our own sensations and feelings, including always the body which belongs to each of us as an embodied self.

We have finally to inquire how the supposed projection of the self can take place at all. The difficulty here is that which besets all forms of subjective idealism. How can the individual, originally shut in within his own private experience, find any ground or motive for transcending it? The view we are considering is that though this would be impossible for a being aware only of his own sensations and feelings, it is possible for one who is aware of himself as doing and undergoing. I admit that this does make some difference, but it fails just at the critical point in supplying what is required of it. The course of sense-experience is only partly determined by the action of the experiencing individual. What occurs within it always in part takes place independently of him and frequently against his will. This pervading contrast between what he determines and what he finds determined for him and not by him, may, let us admit, suggest the presence of a condition or conditions other than his own action. But what clue has he to the nature of this other factor? It may be an unknowable 'thing-in-itself' or 'things-in-themselves'. It may be a constitutive law of the individual's own being, limiting and conditioning his life's history in all its phases and stages. This is what Leibniz held to be true of his monads. Again, it may be a single agent, such as Berkeley's God. There is no ground or motive for apprehending it as a world of things interacting with us and with each other, and appearing as bodies with which we communicate through our own bodies.

It was no doubt difficulties of this sort which led Ward to hold that the projection of the self originally takes place in intersubjective intercourse, so that social communion with persons precedes and preconditions the awareness of independently existing things.[1] Unfortunately this first step is no more intelligible than the second. It is clear, indeed, that when two men, *A* and *B*, strive to get possession of the same loaf of bread, each of them will become cognisant of the other as a distinct individual with perceptions, feelings and wants definitely similar to his own. Ward's description of what takes place is so far convincing. But it is impossible to follow the description at all unless we assume that *A* and *B* apprehend each his own particular body and the particular body of the other as in a definite spatio-temporal relation to the same particular loaf of bread. If we try to substitute for *A*'s body and *B*'s body and for the loaf private incommunicable sensations of *A* and *B* we are altogether lost. We fail to make the substitution. The mental experiment is none the less instructive. It enables us to realise that in such situations as we are trying to imagine, intersubjective intercourse could not, on this hypothesis, possibly begin.

5. *Activity and Immediate Experience*

Without relevant immediate or actual experience, we could not know what it is to be active. Yet we are not aware of our own action as merely falling within our immediate experience. The awareness of ourselves as active always involves these two constituents—immediate experience, and the thought of what is not immediately experienced. These two constituents are distinguishable by reflective analysis, but cannot either of them be apprehended independently of the other. Even in analysis, it is a difficult and precarious, perhaps an impossible undertaking to fix in detail precisely where the one begins and the other ends.

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[1] This doctrine is first clearly stated in *The Realm of Ends*. To begin with, e.g. in his *Encyclopaedia* article, Ward seems to have thought of the projection of the self as prior to intersubjective intercourse. Traces of this earlier view still survive in his later work. But they seem to me inconsistent with his mature teaching.

Broadly and generally we may say that sensations and feelings of pleasure and pain are indispensable on the side of immediate experience. But they are not sufficient. There is also, besides these, though inseparable from them, an immediate experience uniquely distinctive of conation. Without this there could be for the experiencing individual no difference between doing and suffering, or between success and failure; we may call it *Felt Tendency*. Here there are two points which must be constantly borne in mind. In the first place, merely felt tendency is not a perception of tendency or of anything else. Considered purely as an immediate experience, it is not a cognition at all. In the second place, it is only abstractly distinguishable within the whole process of immediate experience at any moment. It is not a part of the process but a character of it, like the current of a stream.

There is a stream of immediate experience which is no mere abstraction, but a concrete process distinct from all others, however difficult it may be for us precisely to mark it off in thought or imagination. Herein lies the seeming strength of the case for subjective idealism, which, it may be argued, is not disposed of merely by pointing out that knowledge of past, future, and possible immediate experiences is impossible unless we transcend in thought the immediate experiences of the moment as they actually come and go. Why does the subjective idealist in general fail to see the point of such difficulties? Why does he treat them as far-fetched and irrelevant? He does not usually give any precise and consistent account of his own position. We must, therefore, attempt to do this for him. His attitude is unintelligible unless he is assuming that the immediate experiences of the individual are so connected with each other that the presence of one may carry us in thought to others which are not present. Without this assumption, all memory-knowledge or reference in thought to what has been experienced in the past, but is so no longer, is impossible. But what sort of connexion is required? If the immediately present experience were so self-complete and self-contained in its own nature that it could be known by itself, there is no reason why it should involve the thought of anything beyond itself. Take the crucial case of the revival or reproduction of present images from past sense-impressions. Why is it taken for granted, even by so thorough a sceptic as Hume, that the fainter revival *a* of an original impression *A* involves not only the present *a* given in immediate experience, but also the thought or idea of *A* which is not so given? This is impossible if *a* is really loose and separate from *A*. It is possible only if *a* is so connected with *A* that in knowing it we must know *A* also. It is an essential condition of knowing *A* as past that we should know *a*; it is also an essential condition of knowing *a* that we should know *A*. Only in this way can such memory-knowledge of past impressions as Hume assumes be possible.

But we have no right to assume *a priori* that what is true in this special case is true only in this special case. If we are to be consistent we are bound to recognise as a general principle that the partial and dependent nature of what is immediately experienced may account for more or less specific knowledge of what is required to complete it.

The vitally important question is whether the principle is confined only to the connexion of what is immediately experienced at one moment with what is immediately experienced at another, or whether it can also be used to account for the possibility of the individual's transcending his immediate experience altogether. Is the process of immediate experience so self-contained and self-complete that it can be known by itself without reference to anything existing beyond it? If this is so, then the subjective idealist is right and there seems to be no way in which the individual can be cognisant of the physical existence of his own body or of external objects. But such knowledge is the datum from which we start, so that we have no right to lay down propositions incompatible with its possibility, unless we have overwhelmingly cogent evidence for them. But there is no such evidence. Certainly none can be derived from the way in which knowledge of the world progresses when once it has begun. Here advance depends throughout on the relative incompleteness of what is already known. What is already known at any stage can never be cut off as a self-complete and self-contained item from what is unknown. On the contrary, relative ignorance and relative knowledge pass into each other. What is relatively known raises questions about what is relatively unknown, and these questions, inasmuch as they are more or less specific, determine in advance the general nature of what we seek or may seek to know. Thus what we call our ignorance is partial knowledge, not complete knowledge of a part but partial knowledge of the whole. If we abide by the same principle in dealing with the first beginnings of knowledge as primarily founded in immediate experience, we are led to the view that the individual does not and cannot know the process of his immediate experience by itself, but only as a phase of a wider process into which it is continued in a specific way determined by its own specific nature.

Why have philosophers in general failed to see this? Because they are blinded from the outset by their own dogmatic assumptions, which vary according to the school to which they belong. To the rationalists, such as Descartes and Leibniz, it seems evident that the thinking mind can know only its own ideas, which have being merely for thought. To empirical philosophers it seems evident that the mind can originally know nothing but its own private sensations, which are taken to include pleasure and pain. It is with these last that we are at present concerned. Their main fallacy lies in ignoring activity, or, if they take it into account, mistaking its nature. In my criticism of Ward I have already discussed the second source of error. We have now to consider the consequence of neglecting the activity factor altogether.

Take away active tendency, and the unity of any process is lost. It dissolves into a multiplicity of successive and simultaneous parts each existentially independent of the others and of everything else. This holds good in particular for the process of immediate experience, if this is regarded merely as a series of sequent and simultaneous sensations, to the exclusion of active tendency. On such a view there can be no reason why knowledge of the procession of sensations should involve knowledge of anything beyond it. The sensationalist philosopher usually sees this, but he usually fails to see another consequence of his position. The several successive and coexisting sensations which he regards as composing the process of immediate experience must be loose and separate from each other, just as the whole process is loose and separate from everything else. Each, therefore, ought to be known by itself without reference to others. But this is a step which even the most uncompromising empiricist refuses to take. No one can get on at all without assuming memory-knowledge, vague or definite, of what has been immediately experienced in the past. But memory-knowledge is impossible without active tendency. It presupposes that the present does not merely come after, but is a development from the past, of such a nature that it cannot be known except as continued from the past. The phrases 'developed from' and 'continued from' lose all relevant meaning if, by excluding active tendency, we dissolve the process of immediate experience into loose and separate parts. Even the doctrine of a sensory continuum does not meet the difficulty. Granting that sensations are changes in a pre-existing sensory continuum, yet in the absence of active tendency each change and every part of it would be existentially loose and separate. Under these conditions, though the changes actually occur, they would not be perceived as such, for this would involve distinction of the present from the past. If it is once admitted that the partial stages and phases of active process may be so connected that in knowing one we may, *eo ipso*, know others, it is arbitrary dogmatism to confine the application of this principle to the connexion of present with past immediate experience. As we now know it, the process of immediate experience is only a thin slice of the world process, and cannot be conceived as subsisting in isolation from the wider whole to which it belongs. What I am now urging is that it never could have been known in such isolation. It is in its intrinsic nature so essentially incomplete that to know it, or any part of it, is to know it as continued in ways determined by its own constitution, into a world process which transcends and includes it.

Further, the incompleteness and what is required to complete it are unintelligible if we leave activity out of count. The partial process has a certain degree of active unity. But the unity is so imperfect that it cannot exist or be known except as falling within a wider unity.

It may be said that I am putting forward only a possible hypothesis. I answer, according to a favourite formula of Bradley's, that 'what may be and must be *is*'. The possible hypothesis must be valid because there is no other which is consistent with the undeniable fact that we are aware of ourselves as embodied and in communication with bodies other than our own, and with other embodied selves.

6. *Perception of Physical Existence as involving at once Sense and Activity*

It is not activity in the abstract, but active process, which, owing to its essential incompleteness, is apprehended as continued beyond itself. But the process of immediate experience, in order to exist at all, must include sensations or sensory revivals. Hence physical existence as primarily known has two inseparable aspects, corresponding to the two aspects of immediate experience without which we should not know what it is to be material or what it is to be active. On the dynamical side we apprehend our own bodies as active and passive in relation to external objects, and these as active and passive in relation to each other. But how are these active and passive existences determined as bodily in their nature, and the process into which they enter as bodily process? Here the sensory factor is indispensable. It is only through material characters derived from sense-experience that we know bodies as such, and the special differences between one body or state of a body and others. In making an effort against resistance I am aware of myself as active, and what I am thus aware of cannot be accounted for merely by reference to my sensations. But it is only through my tactual and motor sensations that I know my action as bodily action and thus know myself as embodied. My sensa are apprehended, not by themselves, but as continued into sensible characters of my body. Coincidently, the same sensa make me aware of a body as an external object resisting my bodily effort, in the way which I have attempted to trace in Book IV, chap. i.

On one point there must be no misunderstanding. When I say that active process as immediately experienced is essentially incomplete, I do not merely mean that it is passive as well as active. I do not merely mean that its success or failure is continually dependent on a condition or conditions beyond it. On such a view, the active tendency might be complete and therefore separably knowable within immediate experience. Such separate knowledge of it would be presupposed in saying that its successes or failures are contingent on conditions other than itself. The only positive clue to anything beyond what is immediately experienced would be in this relative passivity. But the utmost this could give would be the thought of some determining agent or agents other than the self. It could not yield the knowledge of a material world, including the individual's own body. My position is radically different. It is that what the individual knows or is capable of knowing as his own doing or undergoing is not merely an immediate experience. It essentially involves the continuation of immediate experience, both on the side of active tendency and of sensation, into what the individual primarily knows not as an external object, but as his own body. Hence his own action is for him from the outset bodily as well as mental. It is the action of an embodied self. Otherwise he could never be aware of external objects at all.

7. *The Knowledge of Other Selves*

We have so far discussed only the way in which physical existences can originally be given at all as perceptual data. But, as I have already shown, the development of knowledge through experience consists in the more or less successful endeavour to correlate such data with each other so as to give guidance in the pursuit of practical and theoretical ends. It is in this process, which is essentially one of inference, that the distinction arises between external bodies which do and which do not belong to embodied selves. The individual finds the first clue to the existence of other selves in the responsive behaviour of certain external objects as contrasted with the indifference of others. Behaviour is responsive when it is in a distinctive and spontaneous way relevant to the individual's own interests, his emotions and practical needs. Consider, for instance, the behaviour of a mother to her child, or of two individuals instinctively actuated by sexual impulse towards each other. A good example of responsive behaviour in the form of conflict is supplied by Ward's instance of the struggle for a loaf of bread. When once the individual recognises that he is dealing with other selves and behaves accordingly, then that reciprocal responsiveness follows, in which intersubjective intercourse consists; and intersubjective intercourse in its more complex and developed forms constitutes membership in a more or less complex community. Thus what is originally, from a logical point of view, only a hypothesis, however natural and inevitable, may be superabundantly verified so that to doubt it is absurd.

It will be seen that I regard the knowledge that one mind has of another as inferential, not immediate. It arises through an interpretation of special modes of bodily behaviour which is at first tentative, and requires to be certified by the results to which it leads. Now it has been maintained that the inferential process is insufficient to account for such knowledge of mind in others as we actually possess, and that such knowledge must be immediate. So far as I understand the reasons given for this view, they seem to rest on false assumptions.

In the first place, it is presupposed that the only relevant kind of inference must be from mere analogy, based on special *resemblance* between the external appearance and behaviour of other bodies, and the external appearance and behaviour of our own. Such resemblance is no doubt a contributory factor. But it is far from being the most important. It is not even in principle essential. What is really essential is what I have called responsive behaviour. If when the baby was hungry, his bottle spontaneously approached his lips in the right position,and spontaneously went away again when his hunger was appeased, the bottle would be for him an embodied self, in spite of want of resemblance between him and it.

In the second place, when it is said that inference cannot account for our certainty of the existence of other minds, it would seem that the verification through intersubjective intercourse is disregarded.

In the third place, there is a fundamental assumption underlying the special arguments of those who hold that experiencing individuals do not know each other by inference. They assume that, if this were so, all knowledge of anything in nature akin to and continuous with mind in the individual would be inferential. Prior to the inference, the individual would know his own body as fundamentally of the same nature as, and continuous in existence with, other bodies, as parts of one purely material world. But his mind, they assume, would be a unique and isolated fact. It may well be doubted whether, starting from this initial position, the individual could have even the thought of a mind other than his own. If we set aside this difficulty, it is still hard to see how any inferential process could account for the intimacy and certainty of such knowledge, as we actually possess it. Inference by mere analogy is clearly precarious; for it would be generalising from the single instance in which a body is initially known to be connected with a mind, to an indefinite multitude of cases in which this is not initially known. Inference from responsive behaviour would hardly be more secure. It would indeed be only a subtler form of the argument from the analogy of the single instance. The individual may indeed reach a position in which he can say with certainty that if this external body were his own, its behaviour would express will and intelligence. But the point is that it is not his own. On the contrary, so far as he initially knows it, it is supposed to be for him merely a material object with nothing in its constitution akin to mind in himself. Hence there is nothing left but the analogical argument: 'This external body behaves in a way which in my own case would imply the presence of a mind; therefore it is in fact actuated by a mind'.

Psychologically, this is a most improbable account of the process by which, e.g., a baby comes to know its mother or nurse. Logically, the inference is precarious because it does not sufficiently exclude the alternative possibility that the responsive behaviour of bodies other than our own may be determined by purely material conditions. It loses whatever cogency it might otherwise seem to possess, if we accept the very credible view that whatever takes place in the material world, whether in animate or inanimate bodies, is in principle capable of being explained through the laws of physical science, including biology and physiology. But even those who accept this view most uncompromisingly would regard it as an utterly incredible paradox that they have no sufficient evidence of the existence of any mind but that which is revealed in themselves in self-consciousness. Even Descartes confined his scepticism to the lower animals and could not extend it to his fellow-men.

My own position is free from such difficulties. If I am right, the experiencing individual immediately knows external objects as continuous in existence with his own being, and therefore as fundamentally akin in their general nature to it, both in its bodily and in its mental aspect. This, however, leaves room for very great special differences between him and them, and between the parts which they and he play in the world-process. They need not be embodied selves any more than the parts and members of his own body as apprehended in self-consciousness. For these are known, not as embodied selves, but only as entering into the constitution of the embodied self. But if there is in the external world some counterpart of mind in us, the question whether, in this or that special case, it takes the form of an individual mind, such as ours, naturally and inevitably arises wherever there is anything to suggest it. It is a question which is capable of being decided unambiguously and certainly, by appropriate evidence in the way of responsive behaviour and the intersubjective intercourse to which it leads. In primitive stages of development, where other clues to the course of nature are lacking, this mode of interpreting the facts tends to be persistently applied, even when the evidence seems very slender from the point of view of an advanced knowledge. Hence the primitive anthropomorphism which the progress of science destroys.

What kind of unity is to be ascribed to the whole which comprehends individual selves and other things? The problem is not raised at all until a relatively late and specialised stage of human development is reached. Primitively the explicit conception of the whole is not present so as to give rise to questions about its nature. It is known only in knowing the interrelation and interdependence of its parts and partial aspects. It is unwittingly presupposed, not expressly discriminated as a distinct object of thought and interest. When it is so discriminated we are already at the stage of speculative metaphysics, or at least of a comparatively advanced and enlightened religion. In the present volume, I attempt to pave the way for a treatment of this religious and metaphysical question. But I refrain from putting forward any answer to it, whether positive or agnostic. I do not even assume that it is a self-complete unity rather than an endless series. I do not reject without further discussion the view that what I call the whole may be so only in the sense that it must include whatever else we can know. Even if we take for granted that the Universe of Being is an absolute unity and not an endless series, and if we reject materialism and monadism, we must beware of jumping to the conclusion that its unity is to be interpreted on the analogy of that of finite selves. To say nothing of the immeasurable and incomprehensible difference between the finite and the infinite, there is also the difficulty that finite individuals are themselves comprehended within the whole. The conception of a self which includes other selves as its parts or members is very difficult, and no one has as yet succeeded in showing how it is even possible.

Chapter VII

FINAL TREATMENT OF THE PSYCHO-PHYSICAL PROBLEM

1. *Summary of Previous Results*

The difficulties of the psycho-physical problem are due to the way in which it has been usually approached from the point of view of physical science. From this point of view the body of the individual self is regarded merely as one external object among others. So regarded, it is contrasted with the purely mental or immediately experienced process which is supposed to be all that is known in self-consciousness. Hence it becomes a question how mere mind and mere body can meet in a unity so as to make possible either their interaction, or their uniform concomitance and co-variation, or the production of one by the other.

This question admits of no satisfactory answer because it is founded on a false assumption. What self-consciousness reveals is not mere mind or 'mental phenomena', but mind and body together in the inseparable unity of the embodied self. Thus the supposed contrast between merely bodily process and merely mental is in fact always, in part, a contrast between the body as external object and the same body as internal object. This contrast is indeed sharply marked, and becomes more and more so as physical science progresses in correlating perceptual data with each other, according to laws which hold for the physical world in general, including the bodies of experiencing individuals. Advance in this direction comes to depend more and more on such methods as measurement, in which the nature of external objects is determined indirectly by their relation to each other rather than directly by their perceptual appearance. The culmination of this development is found in modern theories of relativity. There is no such relativity in the primary awareness of the self as embodied. But however undeniable and important the distinction is between the body as external and as internal object, it neither is nor implies a severance of mind and body such as would make it a question how they can come together. It supplies no reason why their unity in self-consciousness should not be simply accepted as an ultimate datum.

2. *How Body and Mind are united in Self-consciousness*

We are now in a position to determine more precisely the nature of the unity of body and mind in the embodied self. We are enabled to do so by the outcome of our previous discussion (especially in Book IV, chaps. iii and vi) of the way in which knowledge transcends immediate experience. This yields two results. We immediately know what we do not immediately experience only so far as what we do immediately experience, in the way of sense and active tendency, is so essentially incomplete that it cannot be known by itself. Hence whatever else is known is known as an extension of what we immediately experience in these two ways, and therefore as continuous with it in existence and fundamentally akin to it in nature. Active process in the individual is his distinctive share in world-process and has no separate existence. The sensory continuum of the individual is a partial extract from a world-continuum in which each of us has his own private share, though it also comprehends far more than what is immediately experienced by finite individuals.

Not only external objects but the individual himself is immediately known to himself in this way. The self of self-consciousness cannot be confined to what we immediately experience either in the way of sense or active tendency. On the side of sense it includes an extension of certain aspects of immediate sensation, which are relatively permanent, in contrast with those particular modifications in the sensory continuum which are perpetually coming and going, and are properly called sense-impressions. In like manner what we immediately experience in the way of active tendency is only a partial ingredient in what we perceive as our own action, incapable of existing or being known by itself, but only as one and continuous with a process which transcends and includes it. What we are thus immediately cognisant of in primary self-consciousness is our own body and bodily processes. If we mean by the term 'mental' only what strictly falls within immediate experience, body and mind are for self-consciousness in the most intimate and essential connexion with each other. The connexion is such that mental process is distinguishable from bodily only by an effort of introspective analysis. As it actually takes place mental process is also bodily; mental action is also bodily action, and mental passivity bodily passivity. There need be no interaction between them; indeed it is hard to see how the two can have the relative distinctness and independence required to make interaction possible. The question how it is that they regularly occur together and vary concomitantly answers itself from this point of view.

3. *The Embodied Self and the Body as External Object*

The same correlation of mental and bodily process will also be discoverable from the point of view of the external observer. This must be so because it is the same body which is known in private self-consciousness and also as an external object. In this respect it makes no difference whether we mean by mental only what is immediately experienced, or take it loosely to include whatever the individual is aware of in self-consciousness. It is a besetting fallacy of those who approach the psycho-physical problem from the external point of view that they fail to distinguish this loose sense from the strict sense; they thus fail to see that what they call mental occurrences are not merely mental but bodily and mental in one. Having thus ignored the unity of body and mind where alone it is to be found, they vainly seek it elsewhere.

This fallacy is part of a wider one, the tendency to neglect and virtually to deny the unique distinctive nature of the subject-object relation, the relation of the experiencing individual to the world, as knowing it and interested in it.

On the other hand, the external point of view has great obvious advantages of its own. The scientific knowledge of the body, such as is attainable by the physiologist, though essentially abstract and schematic, is in its own way incomparably more exact and comprehensive than any which is possible through individual self-consciousness. Again, in self-consciousness each individual knows only his own body and other things as external to it. For physical science, on the contrary, the bodies of individual selves are known only as parts of the external world in general. Hence the scientific mode of approach leads to a sharp formulation of the fundamental problem, 'How is it that mental process arises in connexion with certain external objects and not with others?' It is true that if it attempts to answer this question purely from its own standpoint, it encounters hopeless difficulties, which can be met only by taking account of the immediate unity of body and mind as revealed in self-consciousness. None the less, it is from the scientific standpoint that the speculative problem is first explicitly and comprehensively conceived.

4. *The Range of Psycho-physical Correlation*

It follows from my account of psycho-physical correlation that it ought to be found to exist between the body as external object and the bodily aspect of the embodied self. It ought also to include what is immediately experienced in the way of sensation and active tendency. So far, then, it is confined to that side of the nature of the individual which is common to him and to the rest of the world of which he is a member—in which he is a shareholder. Active process in him is the part which he plays in the world's process and in which he has his separate existence. His sensory continuum is a partial phase of the world-continuum. In thus exclusively considering the solidarity between the individual and the world to which he belongs, we have neglected that side of his nature which is peculiarly and distinctively his own as an individual subject capable of knowing and being interested in other things and himself. Knowledge can never be resolved into mere sensation. It essentially involves the thought of what is not immediately experienced. Apart from thought, active tendency is blind; it cannot take shape as will or desire; for this there must be some prenotion of what is sought before it is attained. Apart from thought, there can be no distinction between past, present and future, or between the real and the merely possible. Apart from thought, the individual cannot perceive either his own body or external objects. In short, he would not be an individual self at all if he were not a thinking being.

Has thought any psycho-physical correlate varying as its object varies? I answer that no separate correlate is discoverable, and none is needed over and above the correlate of immediate experience. Mere thought is an abstraction which cannot exist by itself as a process or state of the self. As I have throughout maintained, it must always have a foothold in what is actually experienced, and vary as this varies. There is thus no difference in what is thought of which is not matched by a corresponding difference in what is actually experienced. It follows that thought does not require any distinctive correlate of its own.

An analogous question arises when we consider pleasure and pain. Active tendency and the content of sense-experience in experiencing individuals may be in their general nature fundamentally akin to, and continuous in existence with, the constitution of things which have no experience of their own. But this is not true of being pleased or the reverse. Pleasure and pain are inseparable from the individuality of the individual who feels them, and can have no counterpart or continuation in things which have no feelings. In this respect there seems to be a radical discontinuity between embodied selves and other parts of nature. But it does not follow that being pleased and the reverse require a physiological correlate peculiarly and distinctively belonging to them apart from active tendency and sensation. As I hold, they are the contrasted ways in which we immediately experience active tendency according as it is successful or unsuccessful, furthered or thwarted.[1] Some psychologists deny that we can account in this way for sensuous pleasure and pain, e.g. the pain of a toothache or the pleasure of a sweet taste. They hold that these arise in connexion with the quality, intensity and duration of sense-experiences, without being conditioned by active tendency. But even on this view, pleasure-pain need have no separate physiological correlate. The correlate of the connected sense-experience will serve for it also.

5. *Ultimate Problems*

In one way embodied selves are of a piece with the rest of the world of finite beings, within which they arise and disappear; in another, there is an abrupt breach of continuity between them and the parts of the same world which are devoid of sentience, feelings and thought. On the one hand, they have their being only as share-holders in a common stock in which other things share also. On the other, they share in this common stock in an altogether peculiar way which constitutes their individuality.

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[1] Mr A. H. Burlton Allen gives an admirable exposition of this view in his recent book, *Pleasure and Instinct*.

It is not only that what simply exists in other things is in them experienced. The being of an individual self essentially includes, besides immediate sense-experience, the thought which transcends it and makes it possible for him to know the world of which he is a member, and himself as a member of it. It involves also the feelings of pleasure and pain which make possible appreciation of values and the distinction between good and evil.

It has been a main contention of the present work that this inseparable intermingling of continuity and discontinuity between experiencing individuals and other parts of nature cannot be simply accepted as an ultimate fact concerning which there is nothing more to say. Those who adopt this attitude really mean that they are afraid of the question or not interested in it. But there is a question, and one that calls for an answer more imperatively than any other.

The direction in which an answer is to be sought may be gathered from what I have already said in the present work, more especially in the argument against Materialism. Mind, as I maintain, must be fundamental in the Universe of Being and not derivative from anything that is not mind. If we discard mind-stuff theories as failing to account for individual selves, and monadism as failing to account for anything else, we are bound to posit one universal and eternal Mind developing and expressing itself in the world of finite and changeable beings which we call Nature. But at this point there are two alternatives between which we have to decide. The universal Mind may be ascribed to Nature itself; this implies that Nature, in spite of the endless multiplicity of distinct existences which it comprehends, is a self-contained unity. Any such view seems to break down under intolerable difficulties. The alternative is to deny that Nature is the entire Universe of Being, and to recognise that it cannot exist at all or be what it is apart from a Being beyond it and distinct from it. This Being, whatever else it is, must be an eternal and universal Mind, giving to Nature, through and through, a character which is otherwise inexplicable.[1]

Questions of this sort do not directly come within the scope of this present volume, which only prepares the way for them. I reserve what I have to say about them for a further work to be entitled *God and Nature*. In this I shall have to consider closely developments of human experience which I have so far almost wholly neglected, more especially the religious, and the ethical in its connexion with religion.

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[1] For instance, it is for this reason that a physiological disposition is also a mental disposition.

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